ERDC/ITL TR-09-2

The CAD/BIM Technology Center
for facilities, infrastructure, and environment

A/E/C CAD Standard

Release 4.0

July 2009

The A/E/C CAD Standard is compliant with Version 4.0 of the U.S. National CAD Standard®.

The A/E/C CAD Standard contains supplemental materials and DoD specific requirements not addressed in the U.S. National CAD Standard®.

Approved for public release; distribution is unlimited.

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Prepared for U.S. Army Engineer Research and Development Center
Vicksburg, MS 39180-6199

Abstract

The A/E/C CAD Standard has been developed by the CAD/BIM Technology Center (Center) for Facilities, Infrastructure, and Environment to eliminate redundant Computer-Aided Design (CAD) standardization efforts within the Department of Defense (DoD) and the Federal Government. The manual is part of an initiative to develop a nonproprietary CAD standard that incorporates existing industry, national, and international standards and to develop data standards that address the entire life cycle of facilities within the DoD.

The CAD drafting standards addressed in the A/E/C CAD standard include presentation graphics, level/layer assignments, electronic file naming, and standard symbology. The Center's primary goal is to develop a CAD standard that is generic enough to operate under various CAD software packages (such as Bentley's MicroStation and Autodesk's AutoCAD) and incorporate existing industry standards when possible.

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Preface

Introduction

The A/E/C CAD Standard has been developed by the CAD/BIM Technology Center (Center) for Facilities, Infrastructure, and Environment to eliminate redundant Computer-Aided Design (CAD) standardization efforts within the Department of Defense (DoD) and the Federal Government. The manual is part of an initiative to develop a nonproprietary CAD standard that incorporates existing industry, national, and international standards and to develop data standards that address the entire life cycle of facilities within the DoD.

The Center is located in the Information Technology Laboratory (ITL), U.S. Army Engineer Research and Development Center (ERDC), Vicksburg, MS. The Director of ITL is Dr. Reed L. Mosher, and the Deputy Director is Dr. Deborah F. Dent. At the time of publication of this report, the Director of ERDC was Dr. James R. Houston, and the Commander of ERDC was COL Gary E. Johnston.

United States National CAD Standard®

In 1995, the combined resources of the Center, the American Institute of Architects (AIA), the Construction Specifications Institute (CSI), the United States Coast Guard, the Sheet Metal and Air Conditioning Contractors National Association (SMACNA), the General Services Administration (GSA), and the National Institute of Building Sciences' (NIBS) Facility Information Council began an effort to develop a single CAD standard for the United States. Working together, these organizations agreed to develop an integrated set of documents that collectively would represent the United States National CAD Standard (NCS).

A Memorandum of Understanding (MOU) was signed on August 8, 1997. In accordance with that MOU, Release 4.0 of the A/E/C CAD Standard follows, utilizes, or references the work developed by each of the

signatories. The two main NCS documents referenced within Release 4.0 of the A/E/C CAD Standard are:

- "Uniform Drawing System"
  The Construction Specifications Institute
  99 Canal Center Plaza, Suite 300
  Alexandria, VA 22314-1588

- "AIA CAD Layer Guidelines"
  The American Institute of Architects
  1735 New York Avenue, NW
  Washington, DC 20006-5292

Each of these documents is available as part of the NCS. Additional information on the NCS, as well as how to purchase a copy, can be obtained from

National Institute of Building Sciences
1090 Vermont Avenue NW, Suite 700
Washington, DC 20005-4905
http://www.buildingsmartalliance.org/ncs/

1 Introduction

Acronyms

First, a few useful acronyms:

- A-E – Architect-Engineer
- A/E/C – Architecture, Engineering, and Construction
- AIA – American Institute of Architects
- ANSI – American National Standards Institute
- ASTM – American Society for Testing and Materials
- BIM – Building Information Modeling
- CAD – Computer-Aided Design
- CSI – Construction Specifications Institute
- DoD – Department of Defense
- FM – Facility Management
- GIS – Geographic Information System
- IAI – International Alliance for Interoperability
- IFC – Industry Foundation Class
- ISO – International Organization for Standardization
- NCS – United States National CAD Standard
- NIBS – National Institute of Building Sciences

- SI – International System of Units (Le Système International d'Unités)
- UDS – Uniform Drawing System

Scope

This manual provides guidance and procedures for preparing Computer-Aided Design (CAD) products within the Department of Defense (DoD).

Chapters 1-5 of this manual address topics such as presentation graphics, level/layer assignments, electronic file naming, and standard symbology. Appendices A-D contain tables on model and sheet file level/layer names, color comparisons, as well as Architecture, Engineering, and Construction (A/E/C) CAD symbology.

Purpose

The purpose of this manual is to set a basic CAD standard to ensure consistent electronic deliverables (products) within the DoD. These consistent deliverables are part of a comprehensive installation life-cycle management strategy. This manual sets a CAD standard specifically for the A/E/C disciplines of facilities development and civil works projects. As this manual evolves, it will be integrated with other standards initiatives by the CAD/BIM Technology Center (Center) for Facilities, Infrastructure, and Environment such as Contract Language Guidelines and Building Information Modeling (BIM).

Background

The immediate benefits of CAD standards are many:

- Consistent CAD products for customers.
- Uniform requirements for A-E deliverables.
- Sharing of products and expertise.
- Collection, manipulation, and exchange of database information.

Recognizing such potential benefits, each of the DoD agencies independently initiated efforts to establish CAD standards in the late 1980's. In 1989 the Air Force Logistics Command released the

"Architectural and Engineering Services for CADD Implementation Within Air Force Logistics Command." Headquarters, U.S. Army Corps of Engineers, in 1990 published Engineer Manual 1110-1-1807, "Standards Manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) Systems." In 1993, the Naval Facilities Engineering Command distributed its "Policy and Procedures for Electronic Deliverables of Facilities Computer-Aided Design and Drafting (CADD) Systems."

To consolidate these efforts into a single standard, the Center was tasked to develop standards for the A/E/C disciplines. This manual presents the Center's effort at standardizing CAD requirements for A/E/C design and construction documents.

International System of Units (SI) Considerations

For this standard manual, the impact of the SI, more commonly referred to as the metric system, on such items as drawing scales, sheet sizes, and dimensioning is addressed. The SI was established by the General Conference of Weights and Measures of 1960, and interpreted or modified from time to time for the United States by the Secretary of Commerce under the authority of Public Law 94-168, the Metric Conversion Act of 1975, and the Metric Education Act of 1978. As of January 1, 1992, in accordance with Public Laws 94-168 and 100-418, the Omnibus Trade and Competitiveness Act of 1988, and Executive Order 12770, "Metric Usage in Federal Government Programs," July 25, 1991, all new and revised construction standards and criteria must be developed using the SI.

Future Technologies

There are several ongoing initiatives to create a universal language for collaborative work in the area of building and construction software. This work stems from the need to automate current building and construction tasks to become more efficient and cost effective. One of these initiatives is by the International Alliance for Interoperability (IAI), a nonprofit building industry alliance comprising architects, engineers, contractors, software vendors, government agencies, research laboratories, and universities. The goal of the IAI is to unite the A/E/C and Facility Management (FM) businesses by specifying Industry Foundation Classes (IFCs) as a universal language. The concept behind the IFCs is to create a series of standard intelligent software objects for the building industry that allow all process disciplines (i.e., architects, designers, engineers, builders, facilities managers) to exchange information. The IAI is developing IFCs that

allow current software packages such as AutoCAD and MicroStation to share building and construction data. IFCs would improve the quality of the life cycle of a building from construction through maintenance (and ultimately to demolition) through reduced expense and delivery time, enhanced communications, and increased discipline proficiency.

Target Systems

This standard does not target any specific CAD system or software. However, to ensure successful translations among CAD applications, certain system-specific characteristics were considered and the standard adjusted accordingly. During the preparation of the standard, several baseline decisions were made:

- The standard must be applicable to the latest release of commercially available CAD packages. AutoCAD and MicroStation were chosen based on their prevalence in the DoD.
- The standard is based on CAD applications that utilize layer/level names and reference files.
- The standard requires every final plotted drawing sheet to have its own separate electronic drawing file.

Design Applications and Other Applications

Numerous design applications have been developed to run on top of basic CAD engines. These applications can be used by designers to generate graphics inside CAD files. Most notable are design software packages for civil/site and BIM.

Document management systems that contain attributes or metadata for individual files and have such features as title block integration are becoming standard tools for management of electronic files. Use of these systems to store searchable metadata for files is encouraged.

Coordination with Design Agent

With all the complexity and options currently available in the world of CAD, it becomes important to coordinate fundamental aspects of design work. The previously mentioned issues of basic platform, design applications, and document management are only three of the issues that can affect the success of a project and the future usefulness of the final documents. As such, each project should have at its initiation discussions

and agreements on such issues as these. Each software package being used should be approved and a determination made on how many of the supporting electronic files should be provided to the customer as a part of the end product.

Additions/Revisions

This standard is intended to be neither static nor all-inclusive and thus will be updated and enhanced as appropriate. Suggestions for improvements are strongly encouraged so that subsequent updates will reflect the input and needs of CAD users.

Recommendations or suggested additions should be sent to:

The CAD/BIM Technology Center
U.S. Army Engineer Research and Development Center
ATTN: CEERD-IS-C/Spangler
3909 Halls Ferry Road
Vicksburg, MS 39180-6199
or by e-mail at: *Steve.C.Spangler@usace.army.mil*

2 Drawing File Organization

Design Area

Available drawing area

The two most extensively used CAD applications within the DoD, AutoCAD and MicroStation, both provide for a drawing area with nearly infinite range in each positive and negative axis (x,y,z).

File accuracy (units)

CAD systems allow the designer to work in “real-world” units. The most common units are feet:inches, feet:thousandths of feet, and meters:millimeters.

MicroStation’s approach to file accuracy allows the user to set the working units (i.e., real-world units) as the following:

- Master Units = The largest unit that may be referred to when working in the design file (e.g., feet, meters)
- Sub Units = Subdivisions of Master Units (e.g., inches, millimeters)

Note: *For MicroStation V8, changing the Master Units in a drawing no longer changes the size of design file elements. For instance, if a design file was created in feet and a 1-ft line is drawn, changing the Master Units to inches results in the line measuring 12 in.*

In AutoCAD, the basic drawing unit for any file is the distance between two fixed Cartesian coordinates. For example, the distance between coordinates (1,1,1) and (1,1,2) is one drawing unit. A drawing unit can correspond to any measurement (e.g., foot, inch, meter, mile, fathom). AutoCAD users may enter the **Units** display option to set the desired drawing units.

The **Units** command of AutoCAD does not have a direct metric system setup. For metric designs, the recommended procedure is to choose the **Decimal** option in the **Drawing Units** dialog box. This will allow each drawing unit to represent decimal meters, millimeters, and so forth, at the discretion of the user.

International Feet versus Survey Feet (V8)

Many sites have to deal with the initial question as to whether a particular project is designed using International Feet or Survey Feet. In some states, it is specified by statute that units of measure for grid coordinates have to be either International Feet or Survey Feet. The two units are defined as follows:

- International Feet: 1 foot = 0.3048000 m
- U.S. Survey Feet: 1 foot = 0.3048006 m

Looking at this comparison, the difference between the two (0.0000006 m) may seem insignificant; however, ultimately this difference may cause coordinate values to be off by several feet, resulting in inaccurate design files. In MicroStation V8, the **units.def** file does contain a definition for Survey Feet (usually stored in **c:\ProgramFiles\Bentley\Workspace\ System\data**), but it is disabled by default. To enable, scroll down the **units.def** file to the section **English units (based on U.S. Survey Foot**) and delete the **#** in front of **#sf,ft,** which will allow for the selection of Survey Feet from the Working Units box the next time MicroStation is started.

Note: *If a drawing has already been created using International Feet, changing the Master Units to Survey Feet will not automatically scale all elements in the drawing to Survey Feet.*

Origin (global origin)

Positioned within every electronic drawing file is an origin (“global origin” in MicroStation and “origin” in AutoCAD). The origin of a drawing file is important because it serves as the point of reference from which all other elements are located. Origins are typically defined in a drawing file by the Cartesian coordinate system of x, y, and z.

The benefit of standardizing the location of the origin of a drawing is most notable in the use of reference files (see section “Reference Files (XREFs)” in Chapter 4). A standardized origin is also helpful when translating files between CAD applications. The recommended global origin

for 2D files in both AutoCAD and MicroStation drawings is x = 0 and y = 0. When 3D files are used, the z-origin should be set to allow for elevations below 0.

Model Files and Sheet Files

Two distinct types of CAD files are addressed in this standard: model files and sheet files.

A model file contains the physical components of a building (e.g., columns, walls, windows, ductwork, piping, etc.). Model files are drawn at full scale and typically represent plans, elevations, sections, etc. Model files can be generated either by placing graphics or from BIM model extractions.

A sheet file is synonymous with a plotted CAD drawing file. A sheet file is a selected view or portion of referenced model file(s) within a border sheet. The addition of sheet-specific information (e.g., text, dimensions, and symbols) completes the construction of the document. In other words, a sheet file is a "ready-to-plot" CAD file.

Figure 2-1 illustrates how different model files are referenced to a sheet file (notice that even the border sheet is a referenced model file). Again, a sheet file is the combination of referenced model files with sheet-specific text/symbols to create a final ready-to-plot CAD file. A useful rule of thumb was stated in the 2nd edition of the American Institute of Architects' (AIA) *CAD Layer Guidelines* (AIA 2005): "Model files are always referenced by other files, while sheet files are never referenced by other files."

Design Models and Sheet Models

Inside each CAD file can exist Design Models (or Model Space for AutoCAD users) and Sheet Models (or Paper Space for AutoCAD users). Design Models are where model files are developed or possibly where model files are assembled prior to creation of the Sheet Model (see the following section "Drawing Sheet Assembly"). Design Models contain graphic information in a model file format. For example, it may contain the entire Architectural Floor Plan model file for a building. It is this model file that is used as a reference for creating individual sheet files.

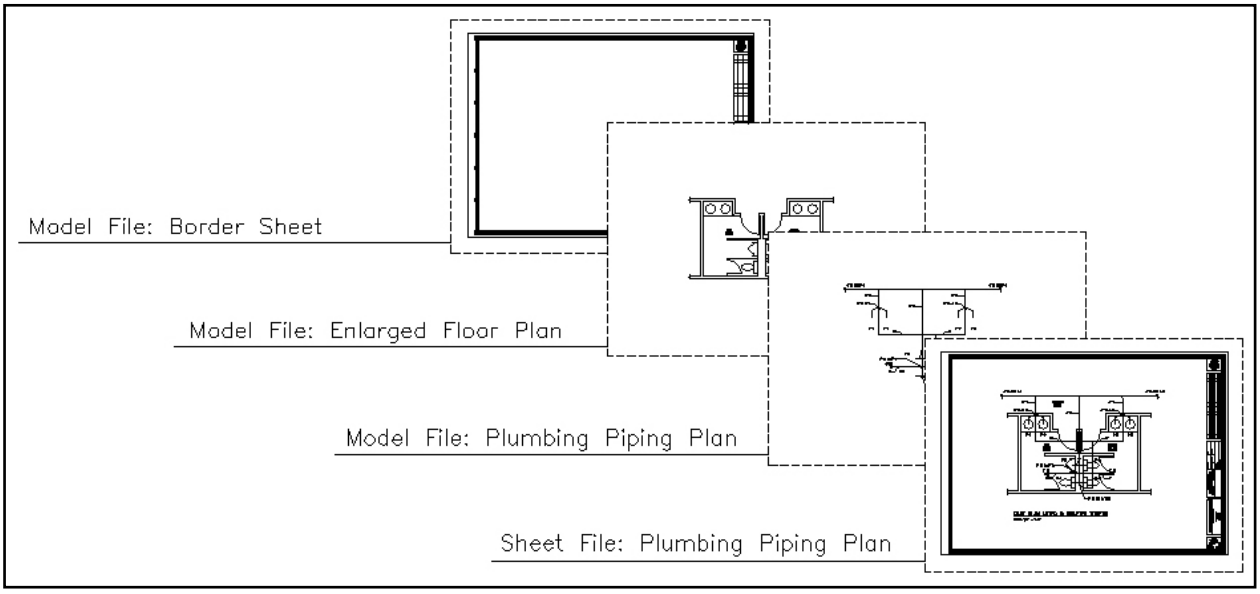


Figure 2-1. Sheet file composition

By contrast, a Sheet Model shows the presentation of model file graphics as they would appear on an individual drawing sheet. This assembly area would contain referenced individual model files, one of which would be a border sheet.

Drawing Sheet Assembly

Two main options for drawing sheet assembly may be used. Each involves assembling individual model files and a border sheet model file to create final plotted sheets. There are some differences as explained in the following paragraphs. One similarity in all assembly options is that nested referenced border sheet model files are not allowed. The option used should be defined at the start of a project, and all files should be built in the same manner.

Option 1a – Use of Design Model and Sheet Model (1:1 border sheet)

This option consists of using a sheet file that contains a Design Model and a Sheet Model. The Design Model is used to assemble all the individual reference files necessary to display the graphics. This may include references to individual views of Design Models in other files, or even coincident references. The Design Model should also contain real-world graphics such as northing and easting coordinate values of points. The Sheet Model contains a reference to the project border sheet model file (at 1:1), plus a reference to the Design Model in the active sheet file, scaled to fit into the Sheet Model (Figure 2-2).

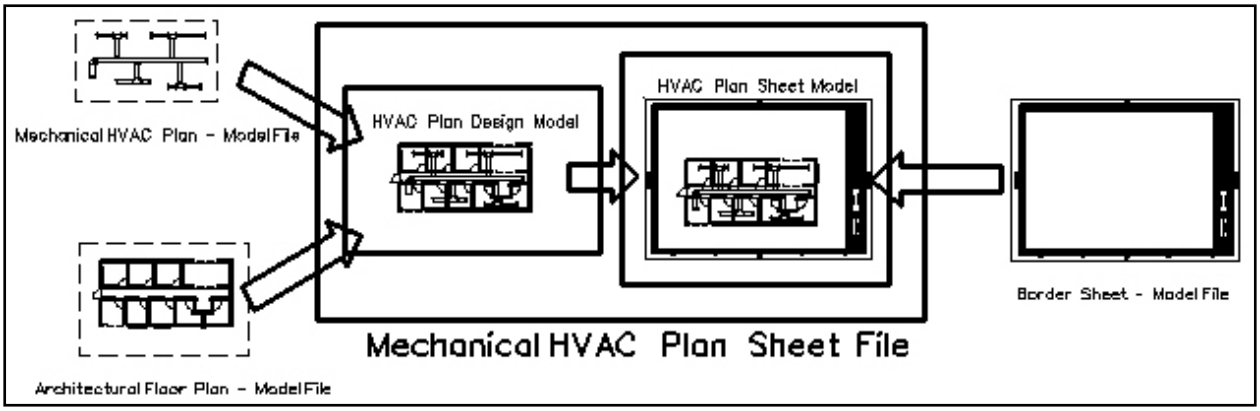


Figure 2-2. Sheet file composition using Design Model and Sheet Model

Option 1b – Use of Design Model and Sheet Model (scaled-up border sheet)

This option is almost exactly the same as Option 1a, with the exception that the reference files assembled in the Design Model are kept at 1:1 and the project border sheet model file is scaled up to fit around the referenced Design Model files within the Sheet Model.

Option 2 – Use of Design Model only

This option consists of using the Design Model only (the Sheet Model (or Paper Space) is not used). This Design Model would have all model files referenced to it, including the border sheet model file. Since all work would be done in the Design Model, a determination should be made at the start of any project using this option on whether to scale up the border sheet model file to fit around the 1:1 model files, or scale down the model files to fit inside the 1:1 border sheet model file (Figure 2-3). Whichever method is chosen, it should be consistent throughout the project. (Note: This option is slowly becoming a legacy option, with most sites using Option 1a or 1b.)

Electronic Drawing File Naming Conventions

Naming conventions for electronic drawing files (both model files and sheet files) allow CAD users to determine the contents of a drawing without actually displaying the file. They also provide a convenient and clear structure for organizing drawing files within project directories.

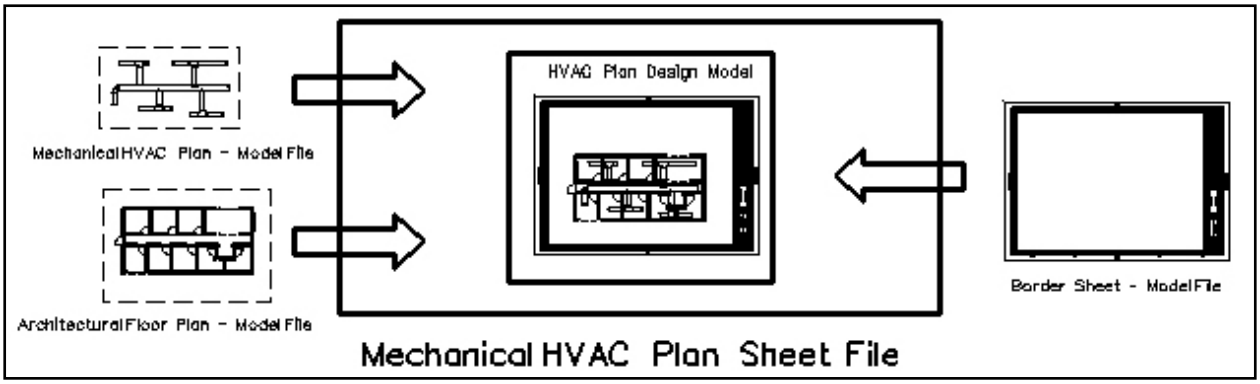


Figure 2-3. Sheet file composition using only the Design Model

Project Code

The Model File naming convention and the Sheet File naming convention both allow for a 0- to 20-character Project Code at the beginning of the file name. Use of a Project Code is recommended and should be identified at the start of each project to ensure consistent file names within that project. Some examples of Project Codes are:

- The official agency project number
- The project number defined by the agency system manager for their record system

The use of Project Codes in file names is highly recommended, because it prevents the same file name from existing in different directories. When this field is used, standard naming should consider use of a special character such as an underscore "_" for all model files so that folder sorting routines group like files together.

When a project includes multiple sites or buildings, it is important to identify each file with the appropriate feature. This should be done as a part of the Project Code. For example, a model file for project P123, building 2, could possibly use a Project Code of "_P123-Bldg2".

Model file naming convention

The model file naming convention (Figure 2-4) has one optional field, followed by three mandatory fields. While the first field is optional and may be omitted, the remaining fields must be used and in the correct sequence.

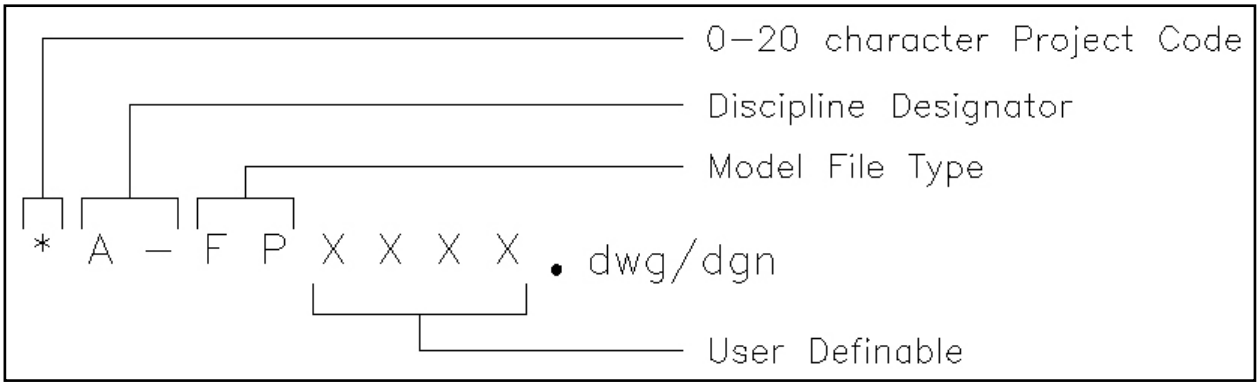


Figure 2-4. Model file naming convention

Following the optional Project Code field, the first two-character field represents the Discipline Designator. The allowable characters for the first character in the Discipline Designator are listed in Table 2-1. The second character of the Discipline Designator field is always a hyphen "-". The next two-character field represents the Model File Type (Table 2-2). The final four-character field is User Definable.

Note: *Several CAD Standards implementation packages use the file name conventions to determine the type of file being created, so certain character fields need to be located in the same position in every file name. If not all of the User Definable characters are needed, placeholders must be used for these implementation tools to function properly*.

Example. The model file name for a project at the U.S. Army Engineer Research and Development Center (ERDC), Building 8000, 1st floor, Architectural Floor Plan could be:

ERDC8000A-FPF1XX.dgn/dwg

where ERDC8000 is the Project Code, A- is the Discipline Designator, FP is the Model File Type (Floor Plan), and F1 is a user-definable set of characters for Floor 1. Since not all of the user-definable characters were used, the characters XX were used as placeholders.

Table 2-1
Discipline Designators

Discipline	Designator
General	G
Hazardous Materials	H
Survey/Mapping	V
Geotechnical	B
Civil	C
Landscape	L
Structural	S
Architectural	A
Interiors	I
Equipment	Q
Fire Protection	F
Plumbing	P
Process	D
Mechanical	M
Electrical	E
Telecommunications	T
Resource	R
Other Disciplines	X
Contractor/Shop Drawings	Z
Operations	O

Table 2-2
Model File Types

Discipline	Code	Definition
General	BS	Border Sheet
	CS	Cover Sheet
	KP	Key Plan
Hazardous Materials	DT	Detail
	EL*	Elevation
	LG	Legend
	PP	Pollution Prevention Plan
	QP*	Equipment Plan
	SC	Section
	XD*	Existing/Demolition Plan
Survey/Mapping	AL	Existing Airfield Lighting Plan
	CP	Existing Communication System Plan
	EU	Existing Electrical Utilities Plan
	HP	Existing Hydrographic Survey and Mapping Plan
	HT	Existing HTCW Utilities Plan
	LG	Legend
	PB	Property Boundary
	PR	Existing Profile
	SC	Existing Section

* = No Model File Table available in Appendix A *(Continued)*

Table 2-2 (Continued)

Discipline	Code	Definition
Survey/Mapping	SP	Survey and Mapping Plan
	UP	Existing Utilities Plan
Geotechnical	DT	Detail
	JP	Joint Layout Plan
	LB	Boring Log
	LG	Legend
	PV	Pavement Site Plan
	SC	Section
	SH*	Schedule
	SI	Subsurface Investigation Plan
Civil	AF	Airfield Plan
	BR	Beach Renourishment Plan
	DT	Detail
	EL	Elevation
	ER	Eco-Restoration Plan
	FC	Flood Control Plan
	GP	Grading Plan
	IP*	Installation Plan/Base Map
	JP	Joint Layout Plan
	KP*	Staking Plan
	LG	Legend
	NG	Navigation/Dredging Plan
	PL*	Project Location Map
	PR	Profile
	SC	Section
	SH*	Schedule
	SP	Site Plan
	TS	Transportation Site Plan
	UP	Utilities Plan
	XD*	Existing/Demolition Plan
Landscape	DT	Detail
	EL*	Elevation
	IP	Irrigation Plan
	LG	Legend
	LP	Landscape Plan
	SC*	Section
	SH*	Schedule
	XD*	Existing/Demolition Plan
Structural	3D	Isometric/3D
	BP	Bridge Plan
	CP	Column Plan
	CW	Misc. Small Civil Works Structures
	DT	Detail
	EL	Elevation
	EP	Enlarged Plan
	FC	Flood Control Structures

* = No Model File Table available in Appendix A *(Continued)*

Table 2-2 (Continued)

Discipline	Code	Definition
Structural	FP	Framing Plan
	LD	Locks and Dams
	LG	Legend
	NP	Foundation Plan
	SC	Section
	SH	Schedule
	XD*	Existing/Demolition Plan
Architectural	3D*	Isometric/3D
	AC	Area Calculations/Occupancy Plan
	CP	Reflected Ceiling Plan
	DT	Detail
	EL	Elevation
	EP*	Enlarged Plan
	FP	Floor Plan
	LG	Legend
	QP	Equipment Plan
	RP	Roof Plan
	SC	Section
	SH*	Schedule
	XD*	Existing/Demolition Plan
Interiors	3D*	Isometric/3D
	DT	Detail
	EL	Elevation
	EP*	Enlarged Plan
	FL	Floor Patterns
	LG	Legend
	QP*	Equipment Plan
	RP	Furniture Plan
	SC*	Section
	SH*	Schedule
	SP	Signage Placement Plan
	WP	System Furniture Plan
	XD*	Existing/Demolition Plan
Fire Protection	3D*	Isometric/3D
	DG*	Diagram
	DT	Detail
	FA	Fire Alarm/Detection Plan
	FP	Fire Suppression Plan
	LG	Legend
	LP	Life Safety Plan
	SH*	Schedule
	XD*	Existing/Demolition Plan
Plumbing	3D*	Isometric/3D
	DG	Diagram
	DT	Detail

* = No Model File Table available in Appendix A *(Continued)*

Table 2-2 (Concluded)

Discipline	Code	Definition
Plumbing	EL*	Elevation
	EP*	Enlarged Plan
	LG	Legend
	PP	Piping Plan
	SH*	Schedule
	XD*	Existing/Demolition Plan
Mechanical	3D*	Isometric/3D
	DG	Diagram
	DT	Detail
	EL	Elevation
	EP*	Enlarged Plan
	HP	HVAC Plan
	HS	Hydraulic Systems
	HT	HTCW Utilities Plan
	LG	Legend
	MD	Machine Design Plan
	MH	Material Handling Plan
	QP*	Equipment Plan
	SC	Section
	SH*	Schedule
	SP	Specialty Piping and Equipment Plan
	XD*	Existing/Demolition Plan
Electrical	AL	Airfield Lighting Plan
	AP*	Auxiliary Power Plan
	CP	Exterior Communication Systems Plan
	DG	Diagram
	DT	Detail
	EU	Electrical Utilities Plan
	GP	Grounding System Plan
	LG	Legend
	LP	Lighting Plan
	PP	Power Plan
	SH*	Schedule
	SS	Special Systems Plan
	XD*	Existing/Demolition Plan
Telecommunications	DG	Diagram
	DT	Detail
	LG	Legend
	SH*	Schedule
	TP	Telephone/Data Plan
	XD*	Existing/Demolition Plan

* = No Model File Table available in Appendix A

Existing/Demolition model file naming. There are instances when a facility is being renovated and the as-built designs need to be revised to show demolition and new items. These revisions would not be made on existing as-built model files, but on copies to ensure the original as-builts are not modified.

A model file type, Existing/Demolition (XD), has been added to the standard to allow users to make revisions to as-built files. This model file type is used to aid users in separating existing-to-remain items from items that will be demolished.

Example. An architect has an existing as-built floor plan model file for Building 1000, 2nd floor. For the current project, walls will be demolished and new walls constructed on the 2nd floor. First, a copy would be made of the original as-built file (B1000A-FPF2XX.dgn/dwg) , and the copy would be named B1000RENA-XDF2XX.dgn/dwg (B1000REN is the Project Code, A- is the Discipline Designator, XD is the Model File Type (Existing/Demolition Plan), and F2XX are user-definable characters (F2=Floor 2)). The architect would open this file and move all demolition items to demolition levels/layers (see Chapter 4, “Status (phase) levels/layers”). When the new items in the Floor Plan are drawn, the architect would open a new model file called something like B1000RENA-FPF2XX.dgn/dwg (B1000REN is the Project Code, A- is the Discipline Designator, FP is the Model File Type (Floor Plan), and F2XX are user-definable characters (F2=Floor 2)). The file

B1000RENA-XDF2XX.dgn/dwg

would be referenced in with the demolition levels/layers turned off. The architect would then use the Floor Plan active levels/layers to construct the new items for that project.

Sheet file naming convention

The sheet file naming convention (Figure 2-5) has one optional field for the Project Code, followed by four mandatory fields. Similar to the format for model file naming, all mandatory fields must be used and in the correct sequence.

The first field is entirely optional and can be used for a 0- to 20-character Project Code (see “Model file naming convention”). The next two characters are the Discipline Designator with Level 2 Designator (Table 2-3). The next character is the Sheet Type Designator (Table 2-4) followed by a two-character Sheet Sequence Number (01-99).

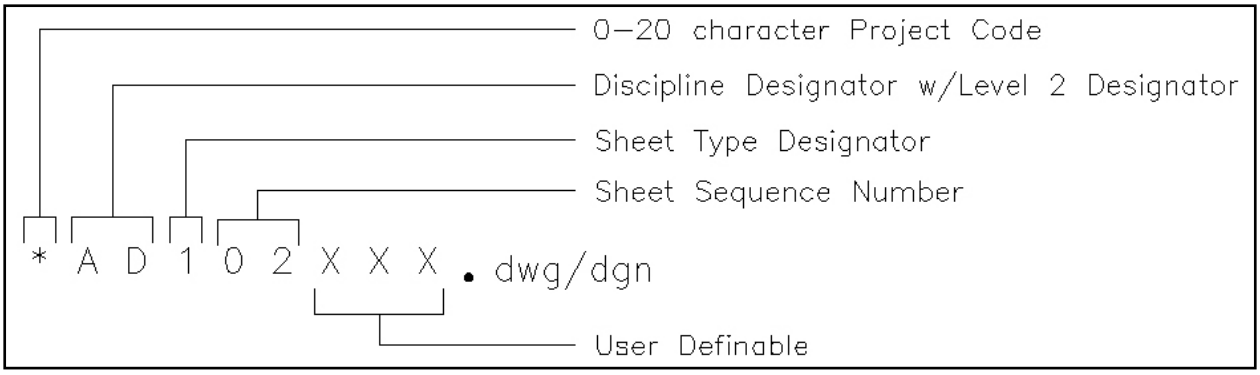


Figure 2-5. Sheet file naming convention

The remaining three characters are user-definable.

Note: *If the sheet sequence number goes above 99 sheets for a particular discipline, the first character in the User Definable field could be used to expand the limit of sheets per discipline to 999. However, if more than 99 sheets are required for one discipline's drawings, the user might want to consider using the Level 2 Designator in the Discipline Designator to further subdivide the discipline (Table 2-3).*

Note: *Occasionally, more than one Sheet Type (e.g., plan, elevation, detail) will be represented in one sheet file. If this is the case, the dominant Sheet Type determines the Sheet Type Designator.*

For example, the sheet file name for a project at ERDC, Building 8000, 1st floor, Quadrant B, Architectural Floor Plan, sheet sequence 02 could be:

ERDC8000A-102F1B.dgn/dwg

where ERDC8000 is the Project Code, A- is the Discipline Designator, 1 is the Sheet Type Designator (Plan), 02 is the Sheet Sequence Number, and F1B is a user-definable set of characters for Floor 1, Quadrant B.

Table 2-3
Discipline Designators with Level 2 Designators

Discipline	Designator	Description	Content
General	G-	All General	All or any portion of subjects in the following Level 2 Designators
	GI	General Information	Drawing index, code summary, symbol legend, orientation maps
	GC	General Contract	Phasing, schedules, contractor staging areas, fencing, haul routes, erosion control, temporary and special requirements
	GR	General Resource	Photographs, soil borings
Hazardous Materials	H-	All Hazardous Materials	All or any portion of subjects in the following Level 2 Designators
	HA	Asbestos	Asbestos abatement, identification, or containment
	HC	Chemicals	Toxic chemicals handling, removal or storage
	HL	Lead	Lead piping or paint removal
	HP	PCB	PCB containment and removal
	HR	Refrigerants	Ozone depleting refrigerants
Survey/Mapping	V-	All Survey/Mapping	All or any portion of subjects in the following Level 2 Designators
	VA	Aerial Survey	Aerial-surveyed points and features
	VF	Field Survey	Field-surveyed points and features
	VH*	Hydrographic Survey	
	VI	Digital Survey	Digitized points and features
	VU	Combined Utilities	
Geotechnical	B-	All Geotechnical	All or any portion of subjects in the following Level 2 Designators
Civil	C-	All Civil	All or any portion of subjects in the following Level 2 Designators
	CB*	Civil Beach Renourishment	Beach Disposal and Renourishment
	CD	Civil Demolition	Structure removal and site clearing
	CE*	Civil Ecosystem Restoration	Environmental restoration
	CF*	Civil Flood Control	Levees, spillways, pump stations
	CG	Civil Grading	Excavation, grading, drainage, erosion control, retention ponds
	CI	Civil Improvements	Pavers, flagstone, exterior tile, furnishings, retaining walls, and water features
	CN*	Civil Navigation	Navigation, harbors, dredging
	CO*	Civil Operation and Maintenance	Repair and upgrade to O&M structures
	CP	Civil Paving	Roads, driveways, parking lots
	CH*	Civil Shore Protection	Erosion protection structures on shoreline
	CR*	Civil Recreation	Recreation facilities
	CS	Civil Site	Plats, topographic, dimension control
	CX*	Civil Security	Security-related work
	CT	Civil Transportation	Waterways, wharves, docks, trams, railways, airfields, and people movers
	CU	Civil Utilities	Water, sanitary sewer, storm sewer, power, communications, natural gas, and steam systems

** = Not in NCS 4.0* *(Continued)*

Table 2-3 (Continued)

Discipline	Designator	Description	Content
Landscape	L-	All Landscape	All or any portion of subjects in the following Level 2 Designators
	LD	Landscape Demolition	Protection and removal of existing landscape
	LG	Landscape Grading	Proposed contours and spot grades
	LI	Landscape Irrigation	Mainlines, valves, controllers, pumps, etc.
	LL	Landscape Lighting	
	LP	Landscape Planting	Landscape planting
	LR	Landscape Relocation	Vegetation relocation information
	LS	Landscape Site	All site hardscape and callouts
Structural	S-	All Structural	All or any portion of subjects in the following Level 2 Designators
	SD	Structural Demolition	Protection and removal
	SS	Structural Site	
	SB	Structural Substructure	Foundations, piers, slabs, and retaining walls
	SF	Structural Framing	Floors and roofs
	SR*	Structural Reinforcement	Concrete reinforcement and anchors
	ST*	Superstructure	Walls, decks, abutments, gates, and weirs
	SC*	Structural Components	Gates, armor, bulkheads, and railings
Architectural	A-	All Architectural	All or any portion of subjects in the following Level 2 Designators
	AS	Architectural Site	
	AD	Architectural Demolition	Protection and removal
	AE	Architectural Elements	General architectural
	AI	Architectural Interiors	
	AF	Architectural Finishes	
	AG	Architectural Graphics	
Interiors	I-	All Interiors	All or any portion of subjects in the following Level 2 Designators
	ID	Interior Demolition	
	IN	Interior Design	
	IF	Interior Furnishings	
	IG	Interior Graphics	Murals and visuals
Equipment	Q-	All Equipment	All or any portion of subjects in the following Level 2 Designators
	QA	Athletic Equipment	Gymnasium, exercise, aquatic, and recreational
	QB	Bank Equipment	Vaults, teller units, ATMs, drive-through
	QC	Dry Cleaning Equipment	Washers, dryers, ironing, and dry cleaning
	QD	Detention Equipment	Prisons and jails
	QE	Educational Equipment	Chalkboards, library
	QF	Food Service Equipment	Kitchen, bar, service, storage, and processing
	QH	Hospital Equipment	Medical, exam, and treatment
	QL	Laboratory Equipment	Science labs, planetariums, observatories
	QM	Maintenance Equipment	Housekeeping, window washing, and vehicle servicing
	QP	Parking Lot Equipment	Gates, ticket, and card access
	QR	Retail Equipment	Display, vending, and cash register
	QS	Site Equipment	Bicycle racks, benches, playgrounds
	QT	Theatrical Equipment	Stage, movie, rigging systems

** = Not in NCS 4.0* *(Continued)*

Table 2-3 (Continued)

Discipline	Designator	Description	Content
Equipment	QV	Video/Photographic Equipment	Television, darkroom, and studio
	QY	Security Equipment	Access control and monitoring, surveillance
Fire Protection	F-	All Fire Protection	All or any portion of subjects in the following Level 2 Designators
	FA	Fire Detection and Alarm	
	FX	Fire Suppression	Fire extinguishing systems and equipment
Plumbing	P-	All Plumbing	All or any portion of subjects in the following Level 2 Designators
	PS	Plumbing Site	Extensions and connections to Civil Utilities
	PD	Plumbing Demolition	Protection, termination, and removal
	PP	Plumbing Piping	Piping, valves, and insulation
	PQ	Plumbing Equipment	Pumps and tanks
	PL	Plumbing	Domestic water, sanitary and storm drainage, fixtures
Process	D-	All Process	All or any portion of subjects in the following Level 2 Designators
	DS	Process Site	Extension and connection to civil utilities
	DD	Process Demolition	Protection, termination, and removal
	DL	Process Liquids	Liquid process systems
	DG	Process Gases	Gaseous process systems
	DP	Process Piping	Piping, valves, insulation, tanks, pumps, etc.
	DQ	Process Equipment	Systems and equipment for thermal, electrical, materials handling, assembly and manufacturing, nuclear, power generation, chemical, refrigeration, and industrial processes
	DE	Process Electrical	Electrical exclusively associated with a process and not the facility
	DI	Process Instrumentation	Instrumentation, measurement, recorders, devices and controllers (electrical and mechanical)
Mechanical	M-	All Mechanical	All or any portion of subjects in the following Level 2 Designators
	MS	Mechanical Site	Utility tunnels and piping between facilities
	MD	Mechanical Demolition	Protection, termination, and removal
	MH	Mechanical HVAC	Ductwork, air devices, and equipment
	MP	Mechanical Piping	Chilled and heating water, steam
	MI	Mechanical Instrumentation	Instrumentation and controls
	MY*	Mechanical Hydraulic Systems	Pump stations, spillways, slide gates
Electrical	E-	All Electrical	All or any portion of subjects in the following Level 2 Designators
	EA*	Electrical Airfield Lighting and Navaids	Visual air navigation systems
	ES	Electrical Site	Exterior electrical systems (power, lighting, auxiliary)
	EC*	Electrical Cathodic Protection	Cathodic protection systems
	EG*	Electrical Grounding	Grounding, lightning protection devices
	ED	Electrical Demolition	Protection, termination, and removal
	EP	Electrical Interior Power	Interior power
	EL	Electrical Interior Lighting	Interior lighting

** = Not in NCS 4.0* *(Continued)*

Table 2-3 (Concluded)

Discipline	Designator	Description	Content
Electrical	EI	Electrical Instrumentation	Controls, relays, instrumentation, and measurement devices
	EY	Electrical Interior Auxiliary Systems	Alarms, nurse call, security, CCTV, PA, music, clock, and program
	ET	Electrical Telecommunications	Telephone, network, voice, and data cables
Telecommunications	T-	All Telecommunications	All or any portion of subjects in the following Level 2 Designators
	TD*	Telecommunications Demolition	Protection, termination, and removal
	TA	Audio Visual	Cable, music, and CCTV systems
	TC	Clock and Program	Time generators and bell program systems
	TI	Intercom	Intercom and public address systems
	TM	Monitoring	Monitoring and alarm systems
	TN	Data Networks	Network cabling and equipment
	TS*	SCADA	Supervisory Control and Data Acquisition (SCADA) systems and equipment
	TT	Telephone	Telephone systems, wiring, and equipment
	TY	Security	Access control and alarm systems
Resource	R-	All Resource	All or any portion of subjects in the following Level 2 Designators
	RC	Resource Civil	Surveyor's information and existing civil drawings
	RS	Resource Structural	Existing facility structural drawings
	RA	Resource Architectural	Existing facility architectural drawings
	RM	Resource Mechanical	Existing facility mechanical drawings
	RE	Resource Electrical	Existing facility electrical drawings
Other Disciplines	X		
Contractor/Shop Drawings	Z		
Operations	O		

* = Not in NCS 4.0

Table 2-4
Sheet Type Designators

Sheet Type	Designator
General (symbols legend, notes, etc.)	0
Plans (horizontal views)	1
Elevations (vertical views)	2
Sections (sectional views)	3
Large-Scale Views (plans, elevations, or sections that are not details)	4
Details	5
Schedules and Diagrams	6
User Defined	7
User Defined	8
3D Representations (isometrics, perspectives, photographs)	9

Coordination Between Sheet File Name and Sheet Identifier

In assigning a sheet identifier (for use in the sheet identification block, reference bubbles, etc.), the user should coordinate with the name assigned to the electronic sheet file. The sheet identifier should consist of the discipline designator, sheet type designator, and the sheet sequence number (Figure 2-6).

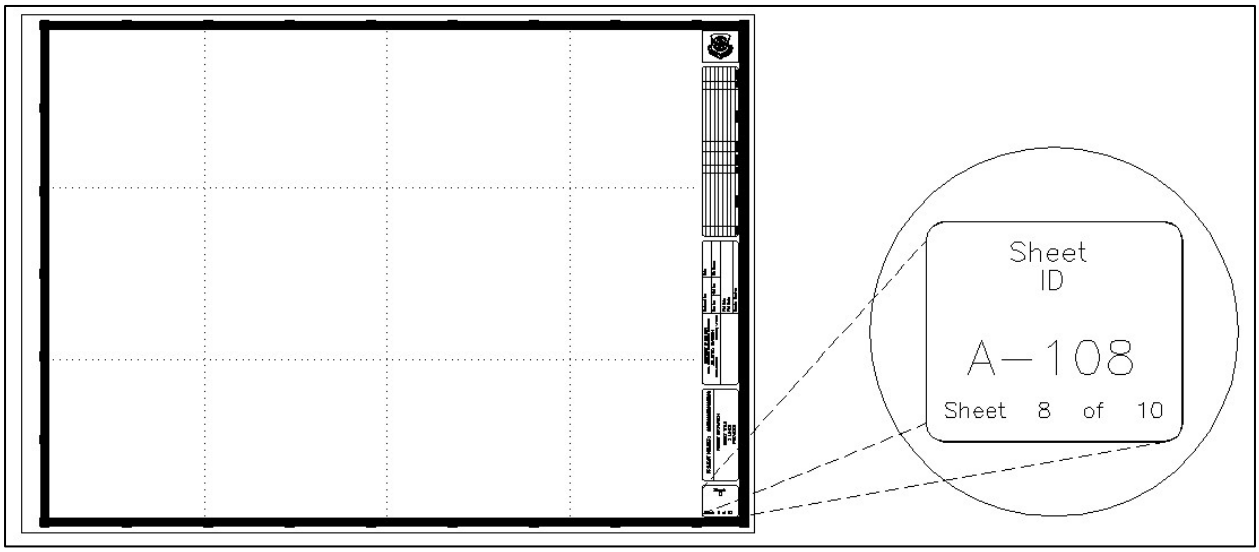


Figure 2-6. Typical border sheet title block with sheet identification block

As far as the sequence of the discipline designators in a drawing set, the NCS mandates that the disciplines follow the order as shown in Table 2-1.

3 Graphic Concepts

Presentation Graphics

The first step in establishing an effective CAD standard is the development of a uniform approach to presentation graphics. Presentation graphics typically consist of drawing elements such as lines, arcs, shapes, text, and their attributes (line color, line width, and line style). This chapter presents brief overviews of the characteristics of presentation graphics and the philosophy used to standardize them.

Line widths

Although "monotone" line work is not contractually improper, varied line widths substantially improve readability. Most commercial CAD systems provide an extensive variety of line widths. However, for the majority of A/E/C drawings, the eight line widths defined in Table 3-1 are considered sufficient and should not be expanded unless an appreciable improvement in drawing clarity or contrast can be realized. Table 3-1 shows information about the various allowed line widths.

Table 3-1
Comparison of Line Widths

Line Thickness	mm	in.	MicroStation Line Weight	Typical Use
Fine	0.18	0.007	wt = 0	Patterning
Thin	0.25	0.010	wt = 1	Dimension lines, dimension leader/witness lines, note leader lines, long break lines, schedule grid lines, and objects seen at a distance
Medium	0.35	0.014	wt = 2	Minor object lines
Wide	0.50	0.020	wt = 3	Major object lines, cut lines, section cutting plane lines, and titles
Extra Wide	0.70	0.028	wt = 5	Minor title underlining, match lines, schedule outlines, large titles, and object lines requiring special emphasis
XX Wide	1.00	0.040	wt = 7	Major title underlining and separating portions of drawings
XXX Wide	1.40	0.055	wt = 10	Border sheet outlines and cover sheet line work
XXXX Wide	2.00	0.079	wt = 15	Border sheet outlines and cover sheet line work

- Fine (0.18 mm). Fine lines should be used sparingly, mostly for hatching/patterning (this line thickness typically does not reproduce well in blue-line format and/or in photocopies).

- Thin (0.25 mm). Thin lines should be used for depicting dimension lines, dimension leader/witness lines, note leader lines, line terminators (arrowheads, dots, slashes), phantom lines, hidden lines, center lines, long break lines, schedule grid lines, and object lines seen at a distance.

- Medium (0.35 mm). Medium lines should be used for depicting most object lines, text (dimensions, notes/callouts, and schedule), and schedule grid accent lines.

- Wide (0.50 mm). Wide lines should be used for major object lines, cut lines, section cutting plane lines, and titles.

- Extra wide (0.70 mm). Extra-wide lines should be used for minor title underlining, schedule outlines, large titles, and object lines requiring special emphasis. For very large scale details drawn at 3 in. = 1 ft-0 in. or larger, the extra-wide width should be used for the object lines. Extra-wide widths are also appropriate for use as an elevation grade line, building footprint, or top of grade lines on section/foundation details.

- XX Wide (1.00 mm). This line weight should be used for major title underlining and separating portions of drawings.

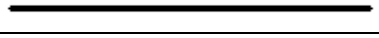
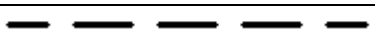
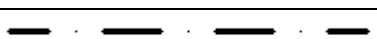
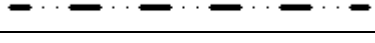
- XXX Wide (1.40 mm). This line weight should be used for border sheet outlines and cover sheet line work.

- XXXX Wide (2.00 mm). This line weight should be used for border sheet outlines and cover sheet line work.

Line types/styles

The predominant line types/styles used in this standard are listed in Table 3-2. The Center has created line style files for MicroStation and AutoCAD (called tsaec.rsc and tsaec.lin, respectively), which include the line styles in Table 3-2, as well as additional discipline custom line styles (see Appendix D). These files are available on the Center's Web site at *https://cadbim.usace.army.mil/cad*.

Table 3-2
Standard Line Types/Styles

ID	Description	MicroStation Designator	AutoCAD Designator	Example
0	Continuous	0	Continuous	
1	Dotted	1	Dot	
2	Dashed	2	Hidden	
3	Dashed spaced	3	Dashed	
4	Dashed dotted	4	Dashdot	
6	Dashed double-dotted	6	Divide2	
7	Chain	7	Center	

Line color

The primary reason to use color in CAD drawings is to improve the clarity of the drawing on a computer monitor. The variety of colors available in a CAD application depends on the capabilities of the computer monitor and its video card. Today, most systems are capable of displaying up to 16.8 million colors. For consistency, this manual recommends that all A/E/C drawings be created using the basic colors presented in Table 3-3 whenever possible.

Note: *The recommended colors are best viewed on a monitor with a black background.*

Appendix C contains a 256-color map for the AutoCAD and MicroStation color palettes. The table maps AutoCAD's default color palette to MicroStation's default color palette. The color table is provided for those users who require more colors than the eight shown in Table 3-3.

Table 3-3
Screen Color Comparison

Color	Color Number		Ratios of RGB		
	AutoCAD	MicroStation	Red	Green	Blue
Blue	5	1	0	0	255
Gray	8	9	128	128	128
Green	3	2	0	255	0
Red	1	3	255	0	0
Yellow	2	4	255	255	0
Magenta	6	5	255	0	255
Cyan	4	7	0	255	255
White	7	0	255	255	255

Note: Color numbers for AutoCAD and MicroStation were taken from default color tables.

Screening

Screened images are created through a process in which the density and pattern of black and white dots are varied to simulate different shades of gray. Varying the intensity of gray scales allows users to distinguish different aspects of a drawing when it is plotted. For example, an area on a site designated for demolition can be assigned a color that has been assigned a screening percentage. When plotted, the area will be shown at a lighter shade compared with other elements in the drawing. This will allow the contractor to immediately identify the demolition area on the drawing.

Table 3-4 lists colors recommended to be used for screening along with a recommended screening percentage. Optionally, when variations in screening are not important, a single screening can be applied to all screened graphics.

Table 3-4
Screened Colors

AutoCAD		MicroStation		Gray Scale Ratios (RGB)		
Color No.	**Screen percent**	**Color No.**	**Screen percent**	**Red**	**Green**	**Blue**
250	60	8	60	102	102	102
251	50	200	50	128	128	128
252	40	168	40	153	153	153
253	30	120	30	179	179	179
254	20	56	20	204	204	204

Plotting

Printers and plotters are controlled by files called pen tables or feature tables. These files (tables) convert thicknesses and/or color in an electronic file to line thicknesses on a paper drawing.

This manual standardizes presentation graphics as they relate to electronic drawing files (screen display) and not the final printed or plotted paper drawing. By employing pen tables, each agency can ensure that consistent drawings are produced from an electronic file regardless of the type of printer or plotter used. It is the responsibility of each field activity to develop pen tables based on the printer/plotter used at that activity.

Text

Text styles/fonts

Each of the two major CAD platforms contains sets of fonts that have been designed for use in CAD drawing presentation. MicroStation has various fonts stored in font resource files, with each resource file capable of containing multiple fonts. AutoCAD has individual fonts as shape files. In addition, each platform has the ability to support True Type fonts that are installed on the individual computer. Each application also has the ability to create additional fonts for its use. Since projects designed in CAD are planned for use many years into the future and files will be used by many different individuals, use of any nonstandard font is not recommended. This includes fonts for symbology, logos, business titles, etc.

There is not a direct relationship between MicroStation resource files and AutoCAD shape files. Therefore it is important that font use be reviewed at the start of a project and decisions made on fonts that are then used consistently throughout the project by all disciplines. If a project is to be exchanged between CAD platforms either because individual offices require different CAD applications, or because the end user requires a specific software format, a general guideline would be to use True Type fonts. This would allow direct translations between the applications. If a project is to be designed in a single CAD application and there is no likelihood that there will be a need to translate it to a different CAD platform, then the native CAD application fonts could be used.

Contrasting text styles (or fonts) are used within a drawing to delineate types of information. In most A/E/C drawings, the fonts shown in Table 3-5 should be sufficient.

- Monotext font. This font creates text characters that are evenly spaced. Monotext font should be used where text fields need to be aligned such as in schedules or, in some cases, title blocks.

- Proportional font. This font creates text where the characters are proportionally spaced. It is appropriate for general notes, labels, or title blocks.

- Slanted font. A slanted font is used where text needs to be easily distinguished from other text.

- Filled font. Filled fonts are used primarily for titles and on cover sheets.

- Symbology font. This font should be used in cases where Greek symbols are representations for technical information.

Table 3-5
Comparison of Font Types

Font Type	MicroStation	AutoCAD	True Type
Monotext	Font #3 ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz	monotxt ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz	Lucinda Console ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz
Proportional	Font #1 ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz	romans ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz	Arial ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz
Slanted	Font #23 *ABCDEFGHIJKLMNOPQRST* *UVWXYZ* *abcdefghijklmnopqrst* *uvwxyz*	romans (obliquing angle = 21.8) *ABCDEFGHIJKLMNOPQRST* *UVWXYZ* *abcdefghijklmnopqrst* *uvwxyz*	Arial (slanted by 21.8 degrees) ***ABCDEFGHIJKLMNOPQRST*** ***UVWXYZ*** ***abcdefghijklmnopqrst*** ***uvwxyz***
Filled	Font #43 **ABCDEFGHIJKLMNOPQRST** **UVWXYZ** **abcdefghijklmnopqrst** **uvwxyz**	Swiss 721 BT **ABCDEFGHIJKLMNOPQRST** **UVWXYZ** **abcdefghijklmnopqrst** **uvwxyz**	Arial Black **ABCDEFGHIJKLMNOPQRST** **UVWXYZ** **abcdefghijklmnopqrst** **uvwxyz**
Symbology	Font #26 ΑΒΧΔΕΦΓΗΙΦΚΛΜΝΟΠΞΡΣΤ ΥΦΩΧΨΖ αβχδεθγηιφκλμνοπξρστ υφωχψζ	greekc ΑΒΧΔΕΦΓΗΙ?ΚΛΜΝΟΠΘΡΣΤ ΥΨΩΞΨΖ αβχδεφγηι?κλμνοπϑρστ υ∈ωξψζ	Symbol **ΑΒΧΔΕΦΓΗΙϑΚΛΜΝΟΠΘΡΣΤ** **ΥϛΩΞΨΖ** **αβχδεφγηιφκλμνοπθρστ** **υϖωξψζ**

Text height

The NCS recommends that the minimum text height for plotted CAD files is 3/32 in. (2.4 mm). However, to maintain legibility in half-size drawings, most sites go no lower than 1/8 in. (3 mm) in text height for dimensions, notes, callouts, table/schedule text, and general text on full size drawings. Subtitles and titles shall be plotted equivalent to 3/16 in. (5 mm) and 1/4 in. (6 mm) lettering size, respectively. The text height and text width shall be assigned equal number values. Line spacing shall be equal to one half of the text height.

General text placement

Text shall never be placed over other text. Text shall not be placed over feature lines, hatching or patterning. If text is placed in a hatched or patterned area, the hatching/patterning shall be clipped so the text can be clearly read.

Text justification depends upon the type of text being placed. For example, general numbered notes shall have upper left justification, elevation labels appearing to the left of a feature shall have bottom right justification, and elevation labels appearing to the right of a feature shall have bottom left justification. (**Note:** In MicroStation, text shall be placed using text nodes when more than one line of text is placed. Text node justification shall be set so that moving the node will not be required or will be minimal should the text require future editing.)

Abbreviations

Abbreviations for words or phrases frequently used in plans, sections, elevations, or details should follow the abbreviations as established in the NCS (UDS Module 5 – Terms and Abbreviations). When possible, the use of abbreviations should be kept to a minimum. Other abbreviations, particularly discipline-unique abbreviations, may be used but must not conflict with those established in the NCS.

Border Sheets

Sheet sizes

Typical A/E/C projects (contract documents) will be prepared on ANSI D sheets (ANSI E may be used for large maps (i.e., installation master plans and drawings for civil works projects)). For international projects, ISO A1 sheets are to be used (ISO A0 may be used for large

maps). Other industry standard sizes may be used depending on specific customer requirements. Table 3-6 lists the standard sizes of all sheets.

Table 3-6
ANSI, Architectural, and ISO Sheet Size Comparison

ANSI		Architectural		ISO	
Mark	**Size in inches**	**Mark**	**Size in inches**	**Mark**	**Size in inches (mm)**
F	28.0 x 40.0	F	30.0 x 42.0	NA	NA
E	34.0 x 44.0	E	36.0 x 48.0	A0	33.1 x 46.8 (841 x 1189 mm)
D	22.0 x 34.0	D	24.0 x 36.0	A1	23.4 x 33.1 (594 x 841 mm)
C	17.0 x 22.0	C	18.0 x 24.0	A2	16.5 x 23.4 (420 x 594 mm)
B	11.0 x 17.0	B	12.0 x 18.0	A3	11.7 x 16.5 (297 x 420 mm)
A	8.5 x 11.0	A	9.0 x 12.0	A4	8.3 x 11.7 (210 x 297 mm)

To develop the graphics for the sheet border, the following guidelines are to be used:

- Top and bottom margin: 3/4 in. (20 mm)
- Left margin: 1-1/2 in. (40 mm)
- Right margin: 3/4 in. (20 mm)

Title block

The Center recommends the use of a vertical title block placed in the right-hand margin of the border sheet as shown in Figure 3-1. Use of the vertical title block provides the most usable drawing space on a sheet. The vertical title block also ensures that the most prevalent and pertinent information remains at the bottom right of the sheet. In compliance with the NCS (UDS Module 2–Sheet Organization), title block data will include the following:

- Designer identification block
- Issue block
- Management block
- Project identification block/sheet title block
- Sheet identification block

Note: *Local standards may modify the content of the title block but should not alter its size or configuration if possible. See the NCS for additional recommendations.*

Designer identification block. The designer identification block (Figure 3-2) contains the logo or name of the agency that designed the sheet.

This space could also be expanded by reducing the size of the issue block to accommodate professional seals when required.

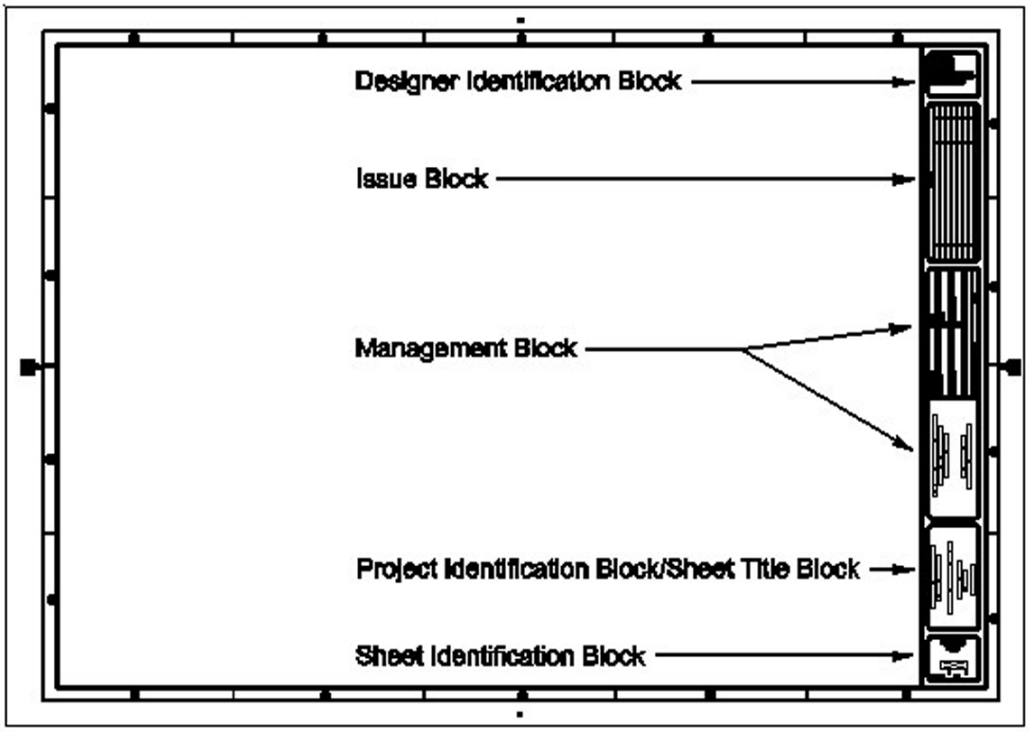


Figure 3-1. Vertical title block

Issue block. The issue block (Figure 3-3) contains a history of revisions, addenda, and/or clarifications to the sheet. The first entry should be placed on the lower left-hand line of the issue block and subsequent entries should be made above it.

Management block. The management block (Figure 3-4) contains information about the designer, reviewer, and submitter. This block can also be used to maintain filing information about the drawing, such as the file name, plot scale, and drawing code (this information is sometimes plotted outside the drawing sheet cut line). If an A-E has developed the drawings, there is room for information about the firm in the lower left portion of the block.

The management block can also contain authorization block information. This is typically where the principals of the design agent would sign drawings, either for a whole project or by individual disciplines. Also, sometimes a disclaimer is included stating whether the project was designed by a Government agency or through a contract with a Government agency.

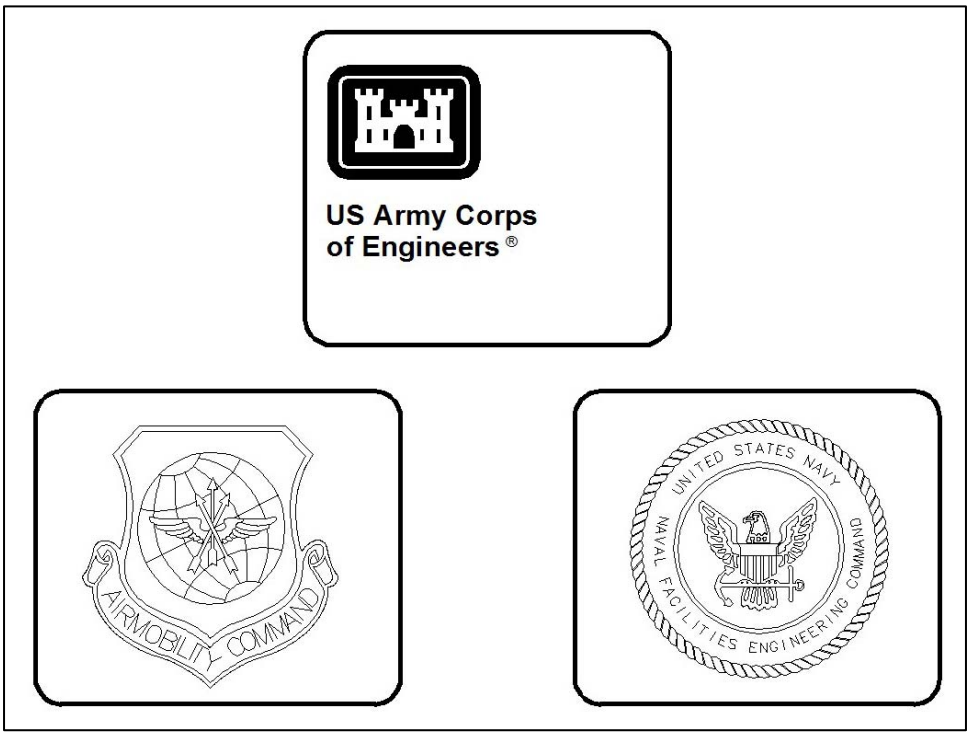


Figure 3-2. Designer identification block

Revisions			
Symbol	Description	Date	Appr.

Figure 3-3. Issue block

U. S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS DISTRICT, STATE AE DESIGN FIRM COMPANY INFORMATION	Designed by:	Date
	Drawn by:	Scale:
	Checked by:	Drawing code:
	Project Engineer/Architect:	Date:

Figure 3-4. Management block

Project identification block/sheet title block. The project identification block/sheet title block (Figure 3-5) contains two sets of information. First, the project name is identified, possibly with the location or phase of the project identified. If small enough, a project logo can be presented in

this block. The second set of information contains a description of the content of the sheet (e.g., Architectural Floor Plan). If more than one type of information is presented on the sheet (i.e., plans, schedules, details), the most important information is identified.

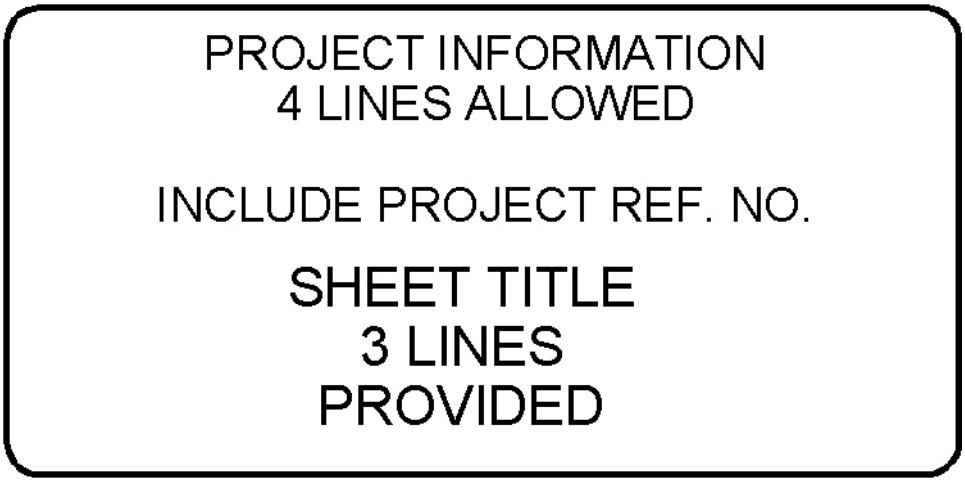


Figure 3-5. Project identification block/sheet title block

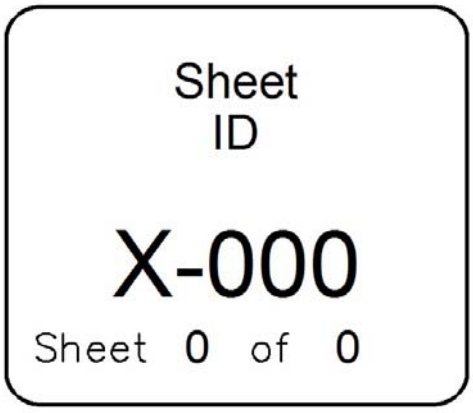


Figure 3-6. Sheet identification block

Sheet identification block. The sheet identification block (Figure 3-6) contains the sheet identifier. This sheet identifier is composed of the discipline designator, the sheet type designator, and the sheet sequence number described in the section, "Electronic Drawing File Naming Conventions" (Chapter 2). The "number of sheets" listing is optional and can contain either the total number of sheets for the entire project drawing set or the number of sheets for that particular discipline designator.

Real Estate Border Sheets

A Real Estate border sheet is basically the same as border sheets described on the preceding pages. Real Estate contract documents are typically prepared on ANSI E size sheets. Because of the nature of information required for Real Estate, two additional information blocks

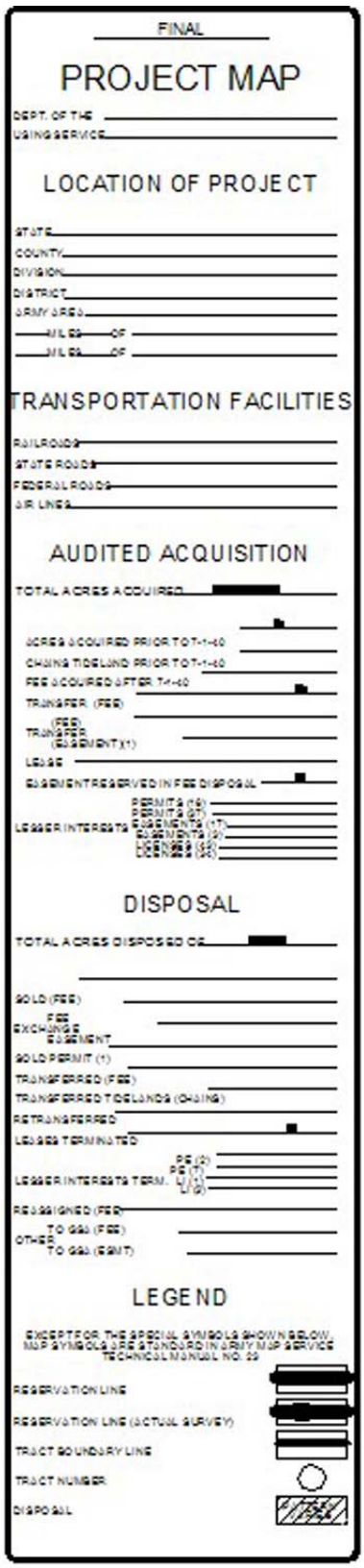


Figure 3-7. Project map block

are required (See the upcoming Real Estate Engineer Regulation 405-1-3 for more information):

- Project map block
- Index map block

Project map block

The project map block (Figure 3-7) contains detailed information about the project. In-depth information about the project location, transportation facilities available, audited acquisitions, and disposal data may be included as part of this block.

Index map block

The index map block (Figure 3-8) contains additional signatures not found in the designer identification block (e.g., Chief of Real Estate Division, Chief of Cadastral Section, etc.). Also, a specific Real Estate drawing number may be included in this block.

Drawing Scales

Typical drawing scales for both inch-pound and SI measurements are indicated in Table 3-7. Table 3-8 lists recommended text sizes for common inch-pound scales, as well as line type scale factors for those scales. Table 3-9 lists recommended text sizes for common metric scales. (Note: The scales shown are not all-inclusive. Scales used should be limited to those commonly found on hand-held architectural, mechanical, and engineering scales.)

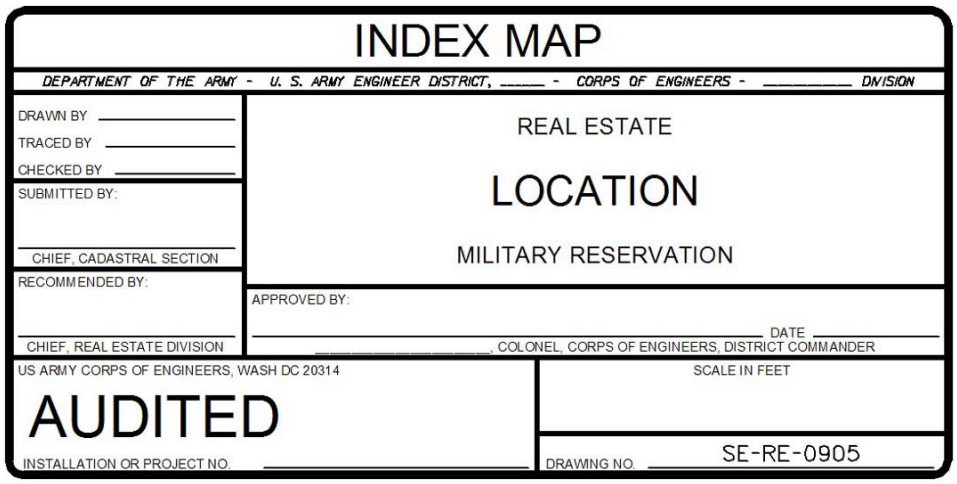


Figure 3-8. Index map block

Table 3-7
Typical Drawing Scales

Drawing Type	Inch-Pound	Metric
Site Plans	1" = 20'	1:200
	1" = 30'	1:400
	1" = 40'	1:500
	1" = 50'	1:600
	1" = 60'	1:700
	1" = 100'	1:1000
	1" = 200'	1:2000
	1" = 400'	1:5000
	1" = 500'	1:6000
	1" = 1000'	1:10000
	1" = 2000'	1:20000
Floor Plan	1/4" = 1' - 0"	1:50
	1/8" = 1' - 0"	1:100
	1/16" = 1' - 0"	1:200
Roof Plan	1/16" = 1' - 0"	1:200
Exterior Elevations	1/8" = 1' - 0"	1:100
	1/16" = 1' - 0"	1:200
Interior Elevations	1/4" = 1' - 0"	1:50
	1/8" = 1' - 0"	1:100
Cross Sections	1/4" = 1' - 0"	1:50
	1/8" = 1' - 0"	1:100
	1/16" = 1' - 0"	1:200
Wall Sections	1/2" or 3/4" = 1' - 0"	1:20
Stair Details	1" or 1-1/2" = 1' - 0"	1:10
Details	3" = 1' - 0"	1:5
	1" or 1-1/2" = 1' - 0"	1:10

Table 3-8
Inch-pound Text Sizes and Line Type Scales

Scale	Text Size	Line Type Scale
12" = 1' - 0" or Full Size	0.125"	1
6" = 1'-0"	0.25"	2
3" = 1' - 0"	0.50"	4
1-1/2" = 1' - 0"	1"	8
1" = 1' - 0"	1.5"	12
3/4" = 1' - 0"	2"	16
1/2" = 1' - 0"	3"	24
3/8" = 1' - 0"	4"	32
1/4" = 1' - 0"	6"	48
3/16" = 1' - 0"	8"	64
1/8" = 1' - 0"	12"	96
3/32" = 1' - 0"	16"	128
1/16" = 1' - 0"	24"	192
1/32" = 1' - 0"	48"	384
1" = 5'	7.5"	60
1" = 10'	1.25'	120
1" = 20'	2.5'	240
1" = 30'	3.75'	360
1" = 40'	5'	480
1" = 50'	6.25'	600
1" = 60'	7.5'	720
1" = 100'	12.5'	1200
1" = 200'	25'	2400
1" = 400'	50'	4800
1" = 500'	62.5'	6000
1" = 1000'	125'	12000
1" = 2000'	250'	24000

Dimensioning

As far as the appearance of dimensions, the NCS is very specific. Dimension text heights should match the size of the text in the rest of the drawing (i.e., notes and callouts) and the location of the dimension text should be at the midpoint and top of the dimension line (where possible). Dimension lines should be offset a minimum of 9/16 in. (14.5 mm) and extension lines should be offset a minimum of 1/16 in. (1.5 mm) from the element being dimensioned. Slashes or filled arrowheads are allowed by the NCS for dimension terminators. Filled arrowhead terminators should have an arrowhead width of 1.5 * TH (TH = dimension text height) and a height of 0.5 * TH. This achieves the NCS requirement of 3:1 filled arrowheads. Dimension terminator selection should be consistent across the entire set of drawings.

Table 3-9
Metric Text Sizes and Line Type Scales

Scale	Text Size	Line Type Scale
1:1 or Full Size	3 mm	1
1:2.5	7.5 mm	2.5
1:5	15 mm	5
1:10	30 mm	10
1:20	60 mm	20
1:30	90 mm	30
1:40	120 mm	40
1:50	150 mm	50
1:60	180 mm	60
1:100	300 mm	100
1:200	600 mm	200
1:400	1.2 m	400
1:500	1.5 m	500
1:600	1.8 m	600
1:700	2.1 m	700
1:1000	3.0 m	1000
1:2000	6.0 m	2000
1:5000	15 m	5000
1:6000	18 m	6000
1:10000	30 m	10000
1:20000	60 m	20000

Dimensioning in Metric (SI)

Methodologies for dimensioning metric (SI) drawings are based upon the recommendations of the Construction Metrication Council of NIBS, Washington, DC. These recommendations comply with the American Society for Testing and Materials (ASTM) E 621-94 (ASTM 1999).

Millimeters

The preferred unit of measure for most A/E/C work is millimeters. Unit notations are unnecessary and should not be used. The dimension is provided as a whole number as shown in Figure 3-9. Also, a note should be added to the drawing stating, “All dimensions and/or dimensions shown in callouts/notes are in millimeters unless otherwise noted.”

When meter measurements are included on the same sheet, the meter dimension is provided as a real number taken to three places past the decimal point (Figure 3-10). Again, unit notations are unnecessary.

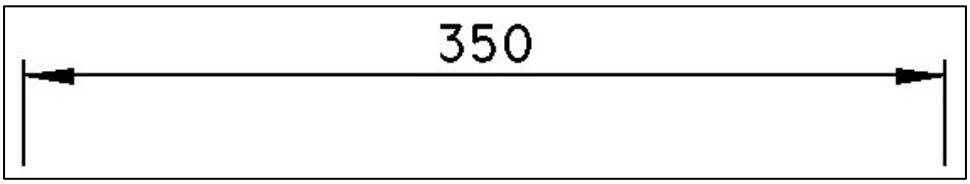


Figure 3-9. Dimension in millimeters. Always shown as a whole number

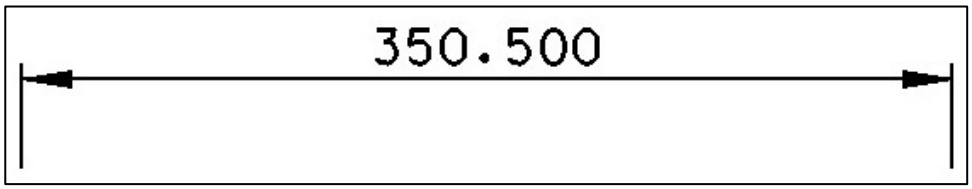


Figure 3-10. Dimension in meters. Always shown as a real number (with decimal)

Note: *In circumstances where very small dimensions are used (e.g., machine details), it is permissible to use real numbers for millimeter dimensions. A note should be placed on the detail regarding this fact.*

Meters

For site plans or other drawings drawn to scales over 1:200, the unit of measure is typically meters. Where greater accuracy is required, show dimensions to three decimal places (Figure 3-10). A note should be added to the drawing stating, "All dimensions and/or dimensions shown in callouts/notes are in meters unless otherwise noted."

Large units of measure

Commas shall not be used when providing large units of measure; instead, a space replaces the traditional comma in numbers containing five or more digits (e.g., the number 45,000 is displayed as 45 000). In numbers containing four digits, no space is necessary (e.g., 5000). These methods are shown in Figures 3-11 and 3-12.

Note: *The automatic dimensioning features of AutoCAD do not allow users to replace commas with spaces in dimension text. The dimension text will presently have to be edited to provide the spacing required by ASTM E 621-94 (ASTM 1999).*

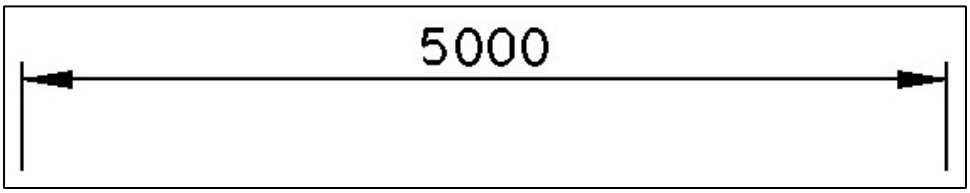


Figure 3-11. Proper dimension presentations for metric measurements with four or fewer digits

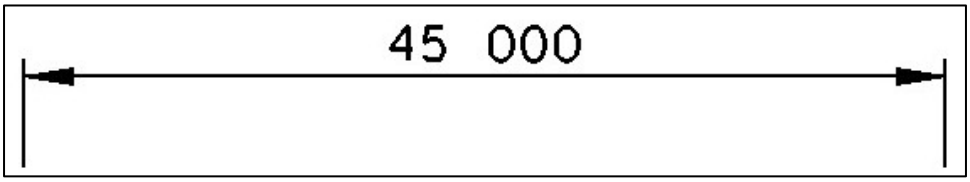


Figure 3-12. Proper dimension presentations for metric measurements with five or more digits

Dual units

To avoid confusion, dual units (both inch-pound and metric) should not be used. As stated in Construction Metrication Council (1998), the use of dual units "increases dimensioning time, doubles the chance for errors, makes drawings more confusing, and only postpones the (metric) learning process."

Exceptions to this include certain "standard building designs" where dual dimensions ensure that the design can be used in either SI or inch-pound projects and in situations where products/components used in an SI project are available only as inch-pound products.

4 Level/Layer Assignments

Levels/Layers

CAD levels or layers are analogous to overlays in manual drafting systems and serve to separate graphic elements (lines, shapes, and text) according to the design discipline they represent (Figure 4-1).

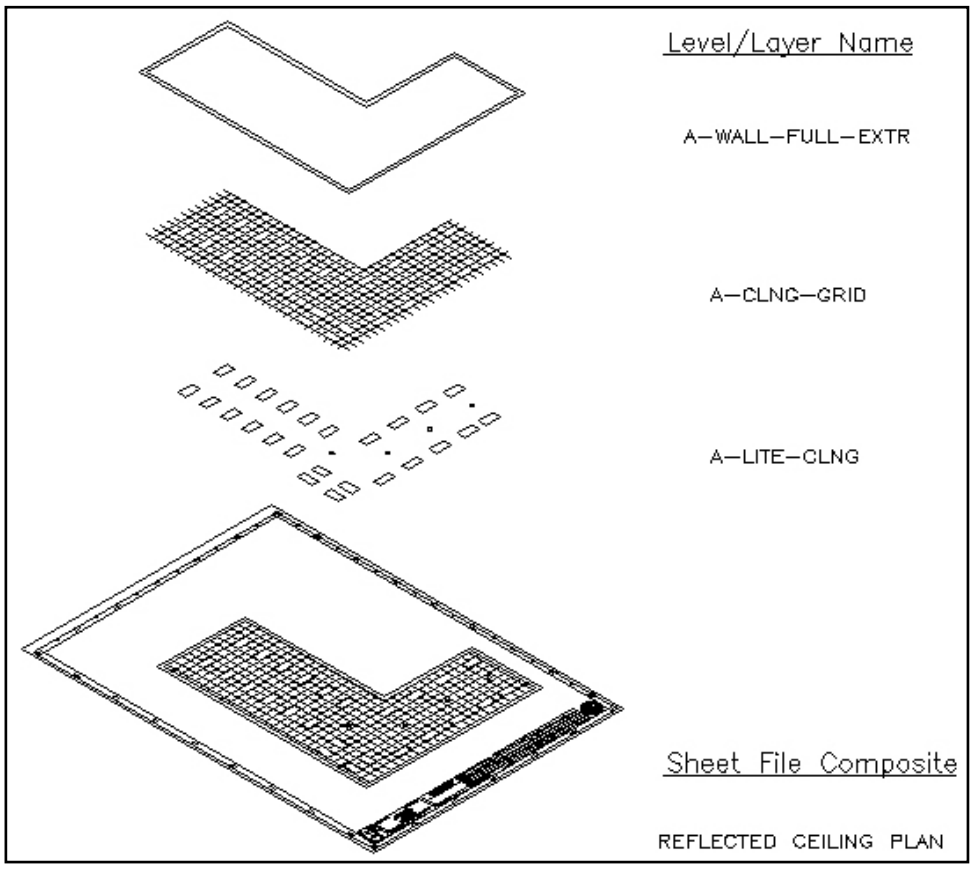


Figure 4-1. Typical levels/layers contained in a sheet file

The types of information represented by individual levels/layers can be grouped into two primary types: model-file-specific information and sheet-file-specific information (Figure 4-2). Sheet-file-specific information can

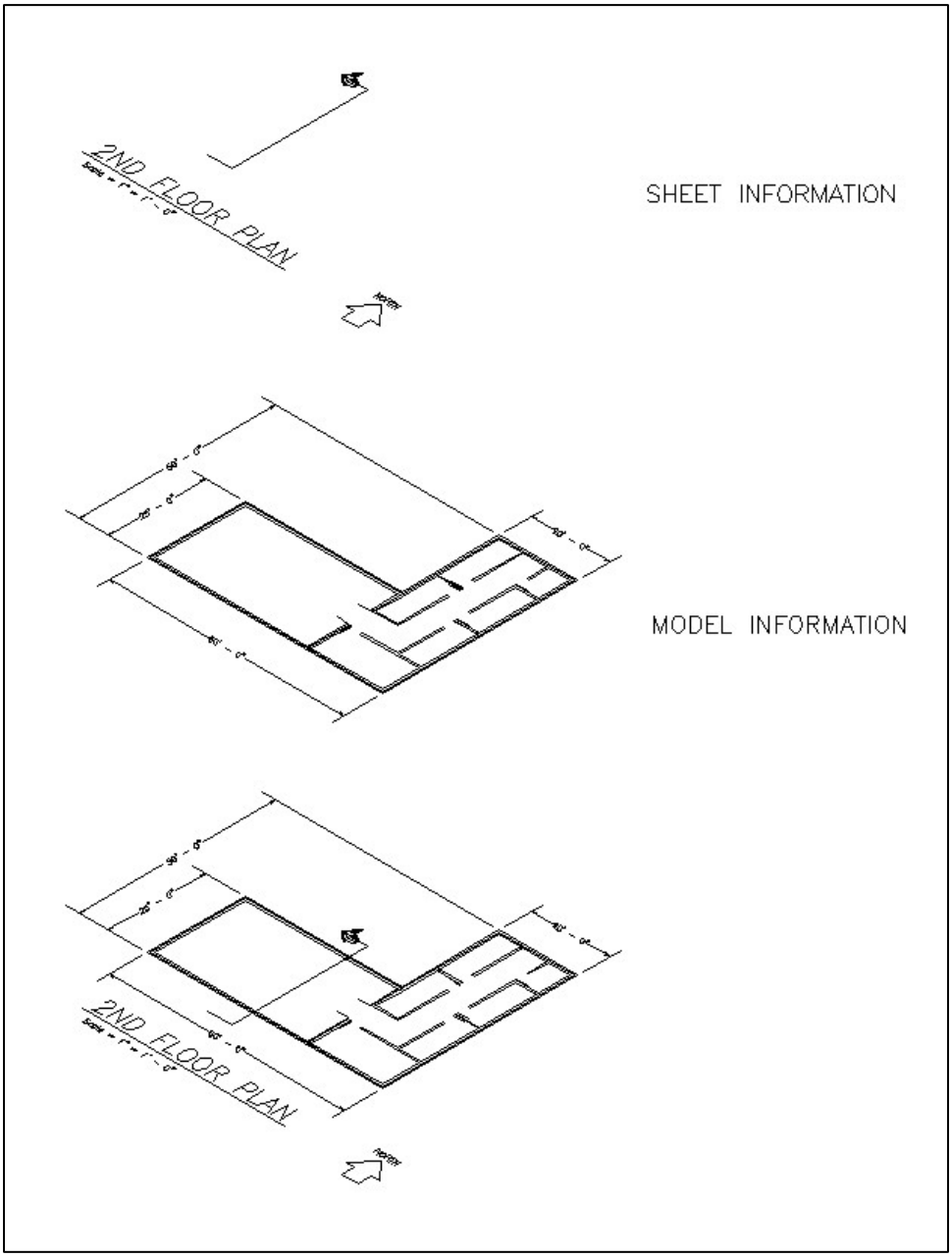


Figure 4-2. Sheet- and model-specific information

then be broken down into two secondary types: design-model-specific and sheet-model-specific.

- Model-file-specific information represents the physical form of a site, a building, or objects composing a building. This information is often shared between CAD files (both model file and sheet file) through the use of reference files. Examples include walls, doors, light fixtures, and room numbers. Model-file-specific information

may be either literal (e.g., walls) or symbolic (e.g., electrical outlets).

- Sheet-file-specific information may include notes, annotative symbols, and titles. This type of information is usually not shared between CAD files or drawings. Design models inside a sheet file contain graphic information that would relate to real-world information (e.g., point coordinates), or information that would be sectioned off into multiple sheets (e.g., a floor plan that may take three sheets to present because of its size). Sheet-model-specific information would include items specific for the presentation of that sheet. This is one reason that sheet models should never be used as a reference file to other files.

A third type of information exists for BIM. The files created in BIM are different from model files and sheet files because they are not directly referenced as graphics in the generation of drawings. Information from BIM is extracted and used to create the traditional models used in CAD generation of drawings.

To use and manipulate model-file- and sheet-file-specific information effectively, every level/layer must be defined (standardized) by its name and its use.

Level/layer naming convention

The reuse, not duplication, of graphic information reduces drawing time and improves project coordination. The level/layer is the basic tool used in CAD for managing graphic information (Figure 4-3). The levels/layers defined within this standard are based on the recommendations set forth in “AIA CAD Layer Guidelines” (AIA 2007).

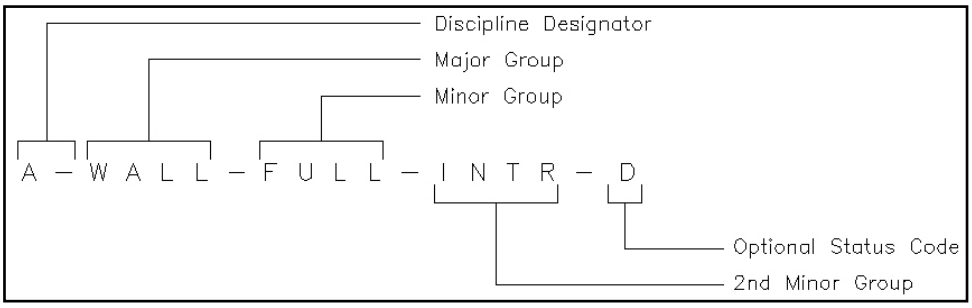


Figure 4-3. Level/layer naming format

A basic level/layer name consists of a two-character Discipline Designator (e.g., “A-“ for Architectural, “M-“ for Mechanical), a four-character Major Group (e.g., “DOOR” for Doors, “LITE” for Lighting Fixtures),

and a four-character Minor Group (e.g., A-WALL-CNTR for wall center lines, M-HVAC-CDFF for HVAC ceiling diffusers). For further differentiation, another four-character Minor Group may be used (e.g., A-WALL-FULL-EXTR for exterior full-height walls versus A-WALL-FULL-INTR for interior full-height walls). An optional item to indicate Status or Phase can also be added to every level/layer name (See “Status (Phase) levels/layers” later in this chapter).

ISO format

ISO 13567-2 (ISO 1998) presents an international method for level/layer naming (Figure 4-4). This method consists of 10 mandatory alphanumeric characters, followed by 10 optional alphanumeric characters. The first two-character field, Agent Responsible, correlates to the AIA’s Discipline Designator. The following six-character field, Element, can map to a shortened version of the AIA’s Major and Minor Groups (e.g., DOOR-FULL becomes DOORFU, DOOR-PRHT becomes DOORPR). The final two-character field in the mandatory level/layer name, Presentation, designates whether the level/layer information is Model information (i.e., model-specific information) or Page/Paper information (i.e., sheet-specific information).

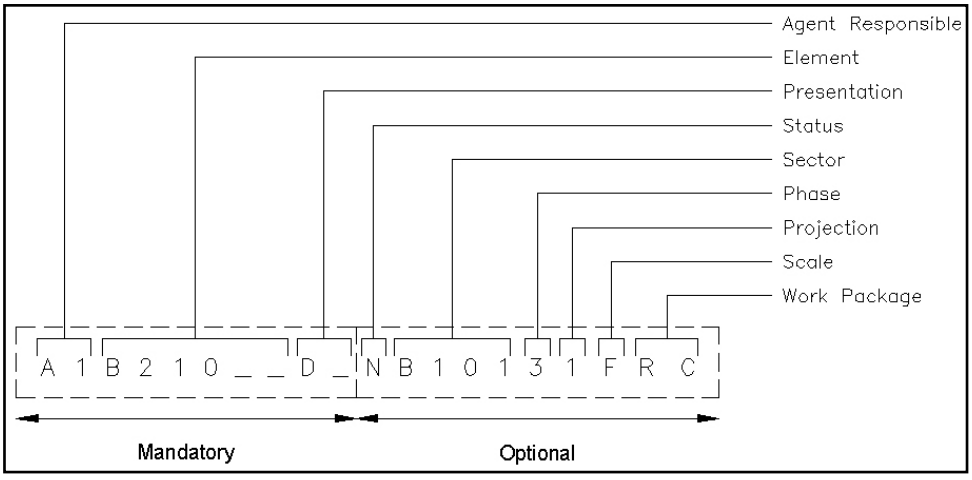


Figure 4-4. ISO 13567-2 level/layer naming method

Model Files

As mentioned in Chapter 2, model files represent full-size drawings of building elements, systems, or information (e.g., the mechanical HVAC system, the architectural floor plan, details, or sections), and sheet files represent final plotted sheets. Model files are used as components in creating plotted sheet files. The information contained within a model file for

a discipline may be referenced by other disciplines to create the particular model files or sheet files for that discipline.

A model file can be considered a work in progress. For instance, a mechanical engineer may reference the architect's floor plan model file to begin development of the HVAC ductwork layout model file. Meanwhile, the architect can continue developing the floor plan to meet new requirements. Any changes to the floor plan would be immediately accessible to the mechanical engineer. The viewing of real-time updates eliminates a great deal of frustration for other disciplines because it allows for on-the-spot rather than after-the-fact modifications.

Level/layer assignment tables

The level/layer assignment tables in Appendix A present the following (Figure 4-5 presents an excerpt):

- The levels/layers assigned to each model file.
- An AIA format level/layer name for each level/layer.
- A detailed description for each level/layer.
- The recommended presentation graphics associated with each level/layer. This includes the line style, line width, and color. (Note: The recommended presentation graphics may be changed to aid in drawing clarity (e.g., to show hidden objects). However, the recommended presentation graphics should be adhered to as much as possible to maintain drawing consistency.)
- The various model files that levels/layers can be created in.

Annotation levels/layers. The function of annotation levels/layers is to contain model-specific information that might not be required by other disciplines. These levels/layers are as follows with ** representing a Discipline Designator (e.g., A-, C-):

**ANNO-DIMS
Witness/extension lines, dimension terminators, and dimension text.

**ANNO-KEYN
Reference keynotes with associated leaders.

**ANNO-NOTE
General notes and remarks.

**ANNO-NPLT
Non-plotting graphic information.

**ANNO-PATT
Patterning, poche, shading, and hatching.

**ANNO-SYMB
Miscellaneous symbols.

**ANNO-TEXT
Miscellaneous text and callouts with associated leaders.

**ANNO-RDME
Read-me information.

**ANNO-REFR
An AutoCAD user-specific layer for use in attachment of external references (i.e., reference files).

Discipline: Architectural
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types							
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Floor Plan	Reflected Ceiling Plan	Roof Plan	Equipment Plan	Area Calculations/Occupancy Plan	Elevations	Sections	Details
General Information													
A-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X
A-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X
A-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X
A-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X
A-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X
A-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X
A-ANNO-REFR	Reference files (AutoCAD users only)	NA	NA	NA	NA	X	X	X	X	X	X	X	X
A-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X
A-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X
Area Information													
A-AREA-IDEN	Room numbers, tenant identifications, area calculations	0	0.35	2	4					X			
A-AREA-LINE	Architectural area calculation boundary lines	0	0.50	4	7					X			
A-AREA-OCCP	Occupant or employee names	0	0.35	2	4					X			
A-AREA-PATT	Area cross hatching	0	0.18	8	9					X			

Figure 4-5. Model file level/layer assignment table

Status (Phase) levels/layers. In some cases, levels/layers may be modified to show the status of a particular item in the drawing (e.g., to be demolished, to be moved, future work, etc.). In these cases, levels/layers may have a Status code appended to them as shown in Figure 4-3. See Table 4-1 for the Status (Phase) codes.

Table 4-1
Status (Phase) Codes

Code	Description
N	New work
E	Existing to remain
D	Existing to demolish
F	Future work
T	Temporary work
M	Items to be moved
X	Not in contract
1-9	Phase numbers

The use of the Status (Phase) code should be limited, since it can significantly increase the number of levels/layers in a model file. Most items can be shown through referenced model files or changing the line style of items. For instance, New Work can be shown in the current model file; Existing to Remain items can be shown through a screened reference file. Not in Contract items and Future Items could be shown with a dashed line style. Therefore, it is up to the user to determine whether the use of the Status (Phase) code in level/layer names increases the readability of the model file.

Border sheet model files

As mentioned before, a model file contains information that can be referenced by other disciplines to create other model files or final sheet files. Border sheets are referenced by all disciplines to create sheet files; therefore border sheets are model files. A border sheet model file contains border sheet linework, the title block, and project-specific symbols and text. Typically, each discipline will use the same border sheet and fill in sheet-specific information within the title block or revision block prior to printing the final sheet file (e.g., sheet number, designer names).

Reference files (XREFs)

Reference files (external references or XREFs) enable designers to share drawing information electronically, eliminating the need to exchange hard copy drawings between the design disciplines. With the use of reference files, the structural engineer need not wait for the architect to complete the architectural floor plans before beginning the structural framing plan model file.

Referencing electronic drawing information makes any changes later made by the architect apparent to the structural designer. This real-time

access to the work of others ensures accuracy and consistency within a set of drawings and helps promote concurrent design efforts. No longer does one discipline have to wait until another discipline is nearly finished before they begin their drawings.

However, the use of level/layer assignments is a key component in the successful use of reference files. Proper use of levels/layers allows others to use the information in various model files efficiently by allowing levels/layers to be turned on only for the desired graphics.

Sheet Files

Sheet files are the final project sheets that are ready to be plotted. A sheet file contains sheet-specific information (e.g., north arrows, scales, section cuts, title block information) in a sheet model (i.e., Paper Space for AutoCAD users). A design model inside the sheet files contains the model information assembled as it would be displayed on a sheet. This model would have real-world spatial alignment and would be used as the primary model for graphical information to be displayed and presented in the sheet model. (See Chapter 2 for more on drawing assembly.)

Level/layer assignment tables

The level/layer assignment tables in Appendix B present the following (Figure 4-6):

- The levels/layers assigned to each sheet file.
- An AIA format level/layer name for each level/layer.
- A detailed definition for each level/layer.
- The recommended presentation graphics associated with each level/layer. This includes the line style, line width, and color.

Users should note that the first 13 level/layers of the sheet file type for every discipline are the same, with the exception that the Discipline Designator changes depending on the discipline for that sheet file type. The unique function of these Annotation levels/layers is to contain sheet-specific information. These levels/layers are as follows with ** representing a Discipline Designator (e.g., A-, C-):

**ANNO-DIMS
Sheet-specific witness/extension lines, dimension terminators, and dimension text.

Discipline: Architectural

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
A-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
A-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
A-ANNO-LEGN	Legends and symbol keys	0	V	V	V
A-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
A-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
A-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
A-ANNO-RDME	Read-me information	0	0.18	5	1
A-ANNO-REDL	Redlines	0	0.25	1	3
A-ANNO-REFR	Reference files (AutoCAD users only)	NA	NA	NA	NA
A-ANNO-REVS	Revisions	0	0.50	4	7
A-ANNO-SCHD	Schedules	0	V	V	V
A-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
A-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Figure 4-6. Sheet file level/layer assignment table

**ANNO-KEYN
Sheet-specific keynotes with associated leaders.

**ANNO-LEGN
Legends and symbol keys.

**ANNO-NOTE
Sheet-specific notes and general remarks.

**ANNO-NPLT
Non-plotting graphic information.

**ANNO-PATT
Sheet-specific patterning and hatching (e.g., keyplan patterning).

**ANNO-RDME
Read-me information.

**ANNO-REDL
Redlines.

**ANNO-REVS
Revisions, amendments, addenda, and modifications.

**ANNO-SCHD
Schedules.

**ANNO-SYMB
Sheet-specific symbols (e.g., north arrow, scales).

**ANNO-TEXT
Sheet-specific text and callouts with associated leaders.

**ANNO-REFR
An AutoCAD user-specific layer for use in attachment of external references (i.e., reference files).

Development of sheet files

As mentioned previously, referenced model files are used in the construction of sheet files. The user opens the sheet file type from Appendix B that is appropriate to his/her discipline, then references existing model files into a design model. This design model is used to generate the sheet model for that file. At this point, information can be placed on the annotation layers for the model that has been assembled.

For example, after the designer assembles the model files and creates the sheet model as described previously in Chapter 2, the designer would have to “turn off” levels/layers within each referenced model file to achieve the desired sheet file. Which method of drawing assembly is to be used determines how additional annotations are placed. In the design model/sheet model option, design-model-specific annotations can be placed in the design model. When a border sheet and the design model are referenced together to form the sheet model, the designer could then place sheet-specific annotations in the sheet model. When the single model approach is taken, the border sheet is referenced along with the design model (separate design file) into a sheet model and annotations are then placed in the sheet model. The sheet file levels/ layers such as P-ANNO-TEXT would be used to fill in sheet-specific information (e.g., sheet number, designer name). Once the final sheet file is achieved, the resulting file is saved (with all reference files attached).

5 Standard Symbology

Introduction

A “cell” in MicroStation and a “block” in AutoCAD are groups of graphical elements that can be manipulated as a single entity. Examples of typical cells/blocks are windows, doors, graphic scale keys, furniture, etc. The use of such symbology enhances CAD productivity and provides an excellent opportunity for CAD standardization.

Electronic Version of the Symbology/Elements

Deliverables

Within the electronic deliverables available as part of the A/E/C CAD Standard, the following symbology is provided:

- MicroStation cells contained in cell libraries (.cel) and custom line styles contained in resource files (.rsc).

Note: *Even though the symbols are provided in cell libraries, for MicroStation V8 a cell library is nothing more than a specialized design file with an individual model for each symbol. The extension .cel is simply used to differentiate a cell library from a standard design (.dgn) file.*

- AutoCAD blocks, each in an individual drawing (.dwg) file, patterns in a pattern library file (.pat), multilines in a multiline library file (.mln), and custom line styles in a line type library file (.lin).

Line styles

Line style definitions determine the particular dash-dot sequence and relative length of dashes, blank spaces, and the characteristics of any included text or shapes. Working with line styles provides a means of distinguishing the purpose of one line from another.

AutoCAD and MicroStation both provide a set of standard line styles, as well as allowing the user to define custom line styles. In AutoCAD these custom line styles are defined in a line type library file (.lin) and a multiline library file (.mln). In MicroStation, custom line styles are contained in resource files (.rsc) (see Chapter 3, “Line types/styles” for more information.

Note: *Custom line styles do not readily translate between systems; therefore users should anticipate that translated custom line styles may revert into their primitive graphics.*

Tabulated Version of the Symbology/Elements

Graphical presentations of the entire symbology library are shown in Appendix D, “A/E/C CAD Standard Symbology.”

The symbology library contains four types of elements: Lines, Patterns, Symbols, and Objects. Lines are defined as a graphical representation of linear drawing features (e.g., utility lines, fence lines, contours). Patterns are defined as repeated drawing elements (e.g., lines, dots, circles) within a defined area. Symbols are defined as MicroStation cells or AutoCAD blocks that are representative of objects (e.g., electrical outlets, smoke detectors). Objects are defined as MicroStation cells or AutoCAD blocks that retain their actual size no matter the scale of the drawing (e.g., 30- by 50-in. desk, 3’-0” door).

References

Air Force Logistics Command. 1989. Architectural and engineering services for CADD implementation within Air Force Logistics Command.

American Institute of Architects. 1988. *Architectural graphic standards*. 8th ed. New York: John Wiley and Sons.

American Institute of Architects. 2007. *AIA CAD layer guidelines: U.S. national CAD standard version 4.0.* Washington, DC: American Institute of Architects Press.

American National Standards Institute. 1972. Graphic symbols for electrical wiring and layout diagrams used in architect and building construction. ANSI Y32.9-1972, Institute of Electrical and Electronics Engineers, New York.

American Society for Testing and Materials. 1999. Standard practice for the use of metric (SI) units in building design and construction (Committee E-6 Supplement to E380). ASTM E 621-94. Philadelphia, PA.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. 1997. 1997 ASHRAE fundamentals handbook. Atlanta, GA.

American Society of Mechanical Engineers. 1995. Decimal inch drawing sheet size and format. ASME Y14.1-1995. New York.

_____. 1995. Metric drawing sheet size and format. ASME Y14.1M-1995. New York.

American Society of Plumbing Engineers. 1998. Data book Volume 1: Fundamentals of plumbing engineering. Chicago, IL.

Construction Metrication Council. 1998. *Construction metrication.* Vol 7, Issue 1. Washington, DC: National Institute of Building Sciences.

Construction Specifications Institute. 2007. *Uniform drawing system.* Alexandria, VA.

Department of Commerce/Department of Defense. 1997. *United States of America nautical chart symbols, abbreviations, and terms.* 10th ed. Washington, DC: Department of Commerce.

Headquarters, U.S. Army Corps of Engineers. 1990. Standards manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) systems. Engineer Manual 1110-1-1807. Washington, DC.

International Organization for Standardization. 1982. Technical drawings — General principles of presentation. ISO 128. Switzerland.

_____. 1998. Technical product documentation - Organization and naming of layers for CAD - Part 2: Concepts, format and codes used in construction documentation. ISO 13567-2. Switzerland.

National Fire Protection Association. 2006. Standard for fire safety and emergency symbols. NFPA 170. Quincy, MA.

National Institute of Building Sciences. 2007. United States National CAD Standard. Washington, DC.

Naval Facilities Engineering Command. 1993. Policy and procedures for electronic deliverables of facilities computer-aided design and drafting (CADD) systems. MIL-HNDBK-1006/7. Alexandria, VA.

Sheet Metal and Air Conditioning Contractors' National Association. 1995. *HVAC duct construction standards-metal and flexible*. 2nd ed. Chantilly, VA.

Appendix A
Model File Level/Layer Assignment Tables

This appendix provides the model file level/layer assignment tables:

General A3
Hazardous Materials A4
Survey/Mapping A6
Geotechnical A19
Civil A22
Landscape A32
Structural A33
Architectural A39
Interiors A42
Fire Protection A44
Plumbing A46
Mechanical A48
Electrical A54
Telecommunications A58

Discipline: General

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults					Model File Types	
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Border Sheet	Cover Sheet	Key Plan
General Information								
G-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V			X
G-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	
G-ANNO-MATC	Match lines	0	0.35	6	5			X
G-ANNO-NOTE	General notes and general remarks	0	0.35	2	4			X
G-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
G-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9			X
G-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
G-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA			X
G-ANNO-SYMB	Miscellaneous symbols	V	0.35	6	5	X	X	X
G-ANNO-TEXT	Miscellaneous text	0	V	V	V	X	X	X
G-ANNO-TTLB	Border and titleblock linework	V	V	V	V	X	X	
G-ANNO-TTLB-GRID	Grid lines inside border	7	0.18	5	1	X		
Grid Lines								
G-GRID-COOR	X-Y coordinate grid lines	0	0.25	7	0			X
G-GRID-COOR-IDEN	X-Y coordinate grid lines annotation	0	0.25	7	0			X
G-GRID-EXTR	Column grid outside building	7	0.18	5	1			X
G-GRID-IDEN	Column grid tags	0	0.25	1	3			X
Floor Information								
G-PLAN-OTLN	Floor outline/perimeter/building footprint	0	0.35	6	5			X
Coordinate Information								
G-COOR-LALO	Latitude/longitude coordinate grid ticks	0	0.25	2	4	X		
G-COOR-LALO-IDEN	Latitude/longitude coordinate text	0	0.25	2	4	X		
G-COOR-STAT	State plane coordinate grid ticks	3	0.25	2	4	X		
G-COOR-STAT-IDEN	State plane coordinate text	0	0.25	2	4	X		
Site Information								
G-SITE-OTLN	Site plan - key map	0	0.35	6	5			X

Note: V = Varies, NA = Not Applicable

Discipline: Hazardous Materials

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Pollution Prevention Plan	Sections	Details
General Information								
H-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X
H-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X
H-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X
H-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
H-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X
H-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
H-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X
H-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X
H-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X
Buildings								
H-BLDG-IDEN	Annotation	0	0.35	2	4	X		
H-BLDG-OTLN	Command posts, information centers	0	0.35	2	4	X		
Decontamination								
H-DECN-EQPM	Decontamination equipment	0	0.25	1	3	X		
H-DECN-IDEN	Annotation	0	0.35	6	5	X		
Disposal Areas								
H-DISP-HAZW	Hazardous waste	0	0.18	5	1	X		
H-DISP-IDEN	Annotation	0	0.35	6	5	X		
H-DISP-MUNT	Munitions	0	0.18	5	1	X		
H-DISP-TANK	Spill containment tanks	0	0.35	6	5	X		
Emergency Fixtures								
H-FIXT-EYEW	Emergency eyewashes	0	0.25	3	2	X		
H-FIXT-SHWR	Emergency showers	0	0.25	3	2	X		
Monitoring Stations								
H-MNST-AIRQ	Air quality	0	0.25	3	2	X		
H-MNST-GWTR	Ground water	0	0.25	3	2	X		
H-MNST-IDEN	Annotation	0	0.25	3	2	X		
H-MNST-LAND	Landfill gas	0	0.25	3	2	X		
H-MNST-SOIL	Soil gas	0	0.25	3	2	X		
H-MNST-SWTR	Surface water	0	0.25	3	2	X		
Pollution Areas								
H-POLL-CONC	Polluted area of concern	0	0.35	2	4	X		
H-POLL-IDEN	Annotation	0	0.35	2	4	X		
H-POLL-ORIG	Point of pollution origin	0	0.35	2	4	X		
H-POLL-POTN	Potential spill, emission, or release source	0	0.35	2	4	X		
Sample Points								
H-SAMP-AIRS	Air samples	0	0.25	1	3	X		
H-SAMP-BIOL	Biological samples	0	0.25	1	3	X		
H-SAMP-GWTR	Ground water samples	0	0.25	1	3	X		
H-SAMP-IDEN	Annotation	0	0.25	1	3	X		
H-SAMP-MAGN	Magnetometer location points	0	0.25	1	3	X		
H-SAMP-SEDI	Sediment samples	0	0.25	1	3	X		
H-SAMP-SOIL	Soil samples	0	0.25	1	3	X		
H-SAMP-SOLI	Solid material samples	0	0.25	1	3	X		
H-SAMP-SWTR	Surface water samples	0	0.25	1	3	X		
H-SAMP-WAST	Waste samples	0	0.25	1	3	X		

Discipline: Hazardous Materials

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Pollution Prevention Plan	Sections	Details
Storage Facilities								
H-STOR-HAZM	Hazardous materials	0	0.35	6	5	X		
H-STOR-HAZW	Hazardous waste	0	0.35	6	5	X		
H-STOR-IDEN	Annotation	0	0.35	6	5	X		
Sections								
H-SECT-IDEN	Component identification numbers	0	0.35	2	4		X	
H-SECT-MBND	Material beyond section cut	0	0.18	5	1		X	
H-SECT-MCUT	Material cut by section	0	0.50	4	7		X	
H-SECT-PATT	Textures and hatch patterns	0	0.18	8	9		X	
Detail Information								
H-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V			X

Note: V = Varies, NA = Not Applicable

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
General Information															
V-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X	X	X
V-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X
V-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X	X	X
V-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X	X
V-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X
V-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X	X	X
V-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X
V-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X	X
V-ANNO-SYMB	Reference symbols	V	V	6	5	X	X	X	X	X	X	X	X	X	X
V-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X
Aerial Survey															
V-AERI-BNDY	Aerial photography boundaries	0	0.35	6	5	X									
V-AERI-BNDY-NEAT	Neat model boundary	0	0.35	2	4	X									
V-AERI-FLYS	Fly station	0	0.35	6	5	X									X
V-AERI-IDEN	Aerial annotation	0	0.35	2	4	X									
V-AERI-INDX	Aerial photo index	0	0.70	7	0	X									
V-AERI-PATH	Aerial flight lines/paths	6	0.35	22	22	X									
V-AERI-PHOT	Photo center (exposure station)	0	0.35	22	22	X									
V-AERI-PNPT	Panel points	0	0.35	6	5	X									X
Airfields															
V-AFLD-BCNS-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	203	45								X		
V-AFLD-BCNS-MISC	Miscellaneous navaids - windcones and beacons	0	0.35	203	45								X		
V-AFLD-BCNS-STRB	Strobe beacons	0	0.35	203	45								X		
V-AFLD-CIRC-CTRL	Control and monitoring circuits	0	0.35	163	41								X		
V-AFLD-CIRC-IDEN	Circuit identifier tags, symbol modifier, and text	0	0.25	2	4								X		
V-AFLD-CIRC-MULT	Multiple circuits	0	0.35	23	46								X		
V-AFLD-CIRC-SERS	Series circuits	0	0.35	203	45								X		
V-AFLD-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	0	0.35	23	46								X		
V-AFLD-DBNK	Ductbanks	EUDUCX	0.25	83	42								X		
V-AFLD-IDEN	Airfield annotation	0	0.35	2	4								X		
V-AFLD-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	0	0.35	23	46								X		
V-AFLD-LITE-APPR	Approach lights	0	0.35	203	45								X		
V-AFLD-LITE-DIST	Distance and arresting gear markers	0	0.35	203	45								X		
V-AFLD-LITE-LANE	Hoverlane, taxilane, and helipad lights	0	0.35	203	45								X		
V-AFLD-LITE-OBST	Obstruction lights	0	0.35	203	45								X		
V-AFLD-LITE-RUNW	Runway lights	0	0.35	203	45								X		
V-AFLD-LITE-SIGN	Taxiway guidance signs	0	0.35	203	45								X		
V-AFLD-LITE-TAXI	Taxiway lights	0	0.35	203	45								X		
V-AFLD-LITE-THRS	Threshold lights	0	0.35	203	45								X		
V-AFLD-VALT	Airfield lighting vaults	0	0.35	203	45								X		
Alignments															
V-ALGN-DATA	Alignment coordinates and curve data	0	0.25	3	2	X	X				X	X		X	X
V-ALGN-LINE	Alignments	4	0.25	2	4	X	X				X	X		X	X
V-ALGN-MAJR	Alignment major stationing and tick marks	0	0.25	1	3	X	X				X	X		X	X
V-ALGN-MARK	Alignment tick marks	0	0.25	3	2	X	X				X	X		X	X
V-ALGN-MINR	Alignment minor stationing and tick marks	0	0.18	6	5	X	X				X	X		X	X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-ALGN-STAT	Alignment stationing	0	0.25	3	2	X	X				X	X		X	X
V-ALGN-SYMB	Alignment symbols (PIs)	0	0.25	6	5	X	X				X	X		X	X
V-ALGN-TEXT	Alignment text, annotation with associated leaders	0	0.25	2	4	X	X				X	X		X	X
Aprons															
V-APRN-CNTR	Apron centerlines	7	0.25	1	3	X									
V-APRN-CNTR-IDEN	Apron centerline annotation	0	0.25	2	4	X									
V-APRN-GRND	Grounding points	0	0.25	2	4	X									
V-APRN-HOLD	Holding position markings	0	0.18	1	3	X									
V-APRN-IDEN	Airfield apron - annotation	0	0.25	2	4	X								X	X
V-APRN-MOOR	Mooring points	0	0.25	2	4	X									
V-APRN-MRKG	Apron markings	0	0.35	4	7	X									
V-APRN-OTLN	Airfield apron - outlines	0	0.35	4	7	X								X	X
V-APRN-SECU	Security zone markings	0	0.18	1	3	X									
V-APRN-SHLD	Shoulders with annotation	0	0.25	2	4	X									
V-APRN-SHLD-MRKG	Shoulder stripes	0	0.25	2	4	X									
Beach Renourishment															
V-BECH-BANK-TOP~	Beach top of bank	0	0.18	6	5	X									X
V-BECH-BKLN	Beach breakline	2	0.25	5	1	X									X
V-BECH-BNCH	Beach bench	6	0.25	22	22	X									X
V-BECH-CNTR	Beach centerline	7	0.18	5	1	X									X
V-BECH-LIMT	Beach limit lines	0	0.35	4	7	X									X
V-BECH-OHWM	Ordinary high water marks	0	0.25	2	4	X									X
V-BECH-OTLN	Beach outline	0	0.18	2	4	X									X
V-BECH-SLOP-IDEN	Beach slope indicator with annotation	0	0.18	7	0	X									X
V-BECH-SLOP-TOP~	Beach top of slope	2	0.25	22	22	X									X
V-BECH-SYMB	Beach symbols	0	0.18	6	5	X									X
V-BECH-TOE~	Beach toe	3	0.35	5	1	X									X
V-BECH-TOE~-IDEN	Beach toe annotation	0	0.18	7	0	X									X
Buildings and Primary Structures															
V-BLDG-DECK	Outdoor decks (attached, no roof overhead)	0	0.35	4	7	X		X						X	X
V-BLDG-DOCK	Loading docks	0	0.35	4	7	X		X						X	X
V-BLDG-IDEN	Building and other stucture annotation	0	0.25	2	4	X		X						X	X
V-BLDG-OTLN	Building and other structure outlines	0	0.50	7	0	X		X						X	X
V-BLDG-OVHD	Building overhangs	0	0.35	4	7	X		X						X	X
V-BLDG-PRCH	Porches (attached, roof overhead)	0	0.35	4	7	X		X						X	X
Borings															
V-BORE-GENL-LOCN	General boring X,Y location marker	0	0.35	6	5	X	X								
V-BORE-GENL-NAME	General boring name	0	0.35	6	5	X	X								
V-BORE-GENL-NOTE	General boring notes	0	0.35	6	5	X	X								
V-BORE-GPRO-LOCN	GeoProbe X,Y location marker	0	0.35	6	5	X	X								
V-BORE-GPRO-NAME	GeoProbe boring name	0	0.35	6	5	X	X								
V-BORE-GPRO-NOTE	GeoProbe boring notes	0	0.35	6	5	X	X								
V-BORE-UNDS-LOCN	Undisturbed boring X,Y location marker	0	0.35	6	5	X	X								
V-BORE-UNDS-NAME	Undisturbed boring name	0	0.35	6	5	X	X								
V-BORE-UNDS-NOTE	Undisturbed boring notes	0	0.35	6	5	X	X								
V-BORE-VCOR-LOCN	Vibra-Core X,Y location marker	0	0.35	6	5	X	X								
V-BORE-VCOR-NAME	Vibra-Core name	0	0.35	6	5	X	X								

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-BORE-VCOR-NOTE	Vibra-Core notes	0	0.35	6	5	X	X								
Borrow Areas															
V-BORW-IDEN	Borrow/spoil area annotation	0	0.25	2	4	X	X								
V-BORW-LINE	Borrow/spoil area	2	0.25	2	4	X	X								
Bridges															
V-BRDG-CHRD-LOW~	Low chord	0	0.35	4	7									X	
V-BRDG-CNTR	Bridge centerlines	7	0.18	1	3	X									
V-BRDG-CTLJ	Control joints	0	0.18	4	7	X									
V-BRDG-DECK	Bridge deck	0	0.35	4	7	X								X	
V-BRDG-IDEN	Bridge annotation	0	0.25	2	4	X									
V-BRDG-OTLN	Bridge outlines	0	0.35	4	7	X									
V-BRDG-RLG~	Bridge railing	0	0.18	4	7	X								X	
Cathodic Protection System															
V-CATH-ANOD	Sacrificial anode system	0	0.35	83	42				X						
V-CATH-CURR	Impress current system	0	0.35	83	42				X						
V-CATH-IDEN	Identifier tags, symbol modifier, and text	0	0.25	83	42				X						
V-CATH-TEST	Test stations	0	0.35	83	42				X						
Channels															
V-CHAN-BANK-IDEN	Channel/canal top of bank annotation	0	0.25	2	4		X							X	X
V-CHAN-BANK-TOP~	Channel/canal top of bank	0	0.25	2	4		X							X	X
V-CHAN-BNCH	Channel/canal bench design feature lines (breaklines form DTMs)	0	0.25	2	4		X							X	X
V-CHAN-BWTR	Breakwaters	0	0.25	6	5	X	X								X
V-CHAN-CNTR	Channel centerline and survey report lines	7	0.18	5	1	X	X								X
V-CHAN-CNTR-IDEN	Channel centerline and survey report lines - annotation	0	0.25	5	1	X	X								X
V-CHAN-DACL	De-authorized channel limits, anchorages, etc.	0	0.25	3	2	X	X								X
V-CHAN-DACL-IDEN	De-authorized channel limits, anchorages, etc. - annotation	0	0.25	3	2	X	X								X
V-CHAN-DOCK	Docks, decks, floats, piers, and mooring facilities	0	0.25	6	5	X	X							X	X
V-CHAN-LIMT	Channel limits, anchorages, turning basins, disposal areas, etc.	0	0.25	6	5	X	X							X	X
V-CHAN-LIMT-IDEN	Channel limits, anchorages, turning basins, disposal areas, etc. - annotation	0	0.25	6	5	X	X							X	X
V-CHAN-NAID	Navigation aids and text	0	0.25	2	4	X	X								X
V-CHAN-SLOP-LINE	Channel cut/fill slope (Indicates cut and fill lines)	0	0.25	2	4	X	X								X
V-CHAN-SPOL	Spoil limits	0	0.35	4	7	X	X								X
V-CHAN-SYMB	Channel/canal symbols	0	0.25	6	5	X	X								X
V-CHAN-TEXT	Channel/canal text, annotation with associated leaders	0	0.25	2	4	X	X								X
V-CHAN-TOE~	Channel/canal toe	3	0.35	5	1	X	X							X	X
V-CHAN-TOE~-IDEN	Channel/canal toe annotation	0	0.25	6	5	X	X								X
V-CHAN-TURN	Turning points	0	0.25	2	4	X	X								X
V-CHAN-WIDE	Channel/canal widener	3	0.35	4	7	X	X								X
Communications															
V-COMM-EQPM	Other communications distribution equipment	0	0.35	23	46					X					
V-COMM-JBOX	Communication junction boxes, pull boxes, manholes, handholes, pedestals, and splices	0	0.35	23	46					X					
V-COMM-OVHD	Overhead communications/telephone lines	COMARX	0.35	4	7	X		X		X				X	X
V-COMM-OVHD-IDEN	Identifier tags, symbol modifier and text	0	0.25	4	7	X		X		X				X	X
V-COMM-POLE	Poles	0	0.35	203	45	X		X		X				X	X
V-COMM-POLE-GUYS	Guying equipment	0	0.35	203	45	X		X		X				X	X
V-COMM-POLE-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	203	45	X		X		X				X	X
V-COMM-UGND	Underground communications/telephone lines	COMUGX	0.35	4	7	X		X		X				X	X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
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V-COMM-UGND-IDEN	Identifier tags, symbol modifier and text	0	0.25	4	7	X		X		X				X	X
Control Points															
V-CTRL-BMRK	Benchmarks	0	0.35	6	5	X	X								X
V-CTRL-GRID	Grid	0	0.25	3	2	X	X								X
V-CTRL-HORZ	Horizontal control points	0	0.35	6	5	X	X								X
V-CTRL-HVPT	Horizontal/vertical control points	0	0.35	6	5	X	X								X
V-CTRL-IDEN	Control point annotation	0	0.35	2	4	X	X								X
V-CTRL-TRAV	Traverse points	0	0.35	6	5	X	X								X
V-CTRL-VERT	Vertical control points	0	0.35	6	5	X	X								X
Domestic Water															
V-DOMW-ABND-PIPE	Abandoned piping	2	0.25	6	5	X		X			X			X	X
V-DOMW-DEVC	Connectors, faucets, reducers, regulators, vents, intake points, taps, backflow preventers, and valves	0	0.25	6	5						X				
V-DOMW-FIRE	Fire lines	FIRE	0.25	1	3						X				
V-DOMW-FTTG	Caps, cleanouts, crosses, and tees	0	0.25	6	5						X				
V-DOMW-HYDT	Hydrants	0	0.25	1	3	X		X			X				
V-DOMW-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-DOMW-MAIN-PIPE	Main domestic water piping	WATRX	0.25	6	5	X		X			X				
V-DOMW-METR	Meters	0	0.25	3	2						X				
V-DOMW-NPW~-HYDT	Non-potable hydrants/flushing hydrants	0	0.25	1	3						X				
V-DOMW-NPW~-PIPE	Non-potable water piping	NONPOT	0.25	6	5						X				
V-DOMW-PITS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	3	2						X				
V-DOMW-PITS-VENT	Vent pits	0	0.25	3	2						X				
V-DOMW-PITS-VALV	Valve pits/vaults	0	0.25	3	2	X		X			X				
V-DOMW-SERV-PIPE	Domestic water service piping	0	0.25	6	5						X			X	X
V-DOMW-SIGN	Surface markers/signs	0	0.25	1	3						X				
V-DOMW-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4						X				
V-DOMW-STNS-PUMP	Booster pump stations	0	0.25	6	5						X				
V-DOMW-STNS-REDC	Pressure reducing stations	0	0.25	6	5						X				
V-DOMW-TANK	Water storage tanks	0	0.25	1	3	X		X			X				
V-DOMW-WELL	Water well houses	0	0.25	1	3						X				
Ditches or Washes															
V-DTCH-BOTM	Bottom of ditch or wash	0, DITCH	0.18	3	2	X								X	X
V-DTCH-CNTR	Centerline of ditch or wash	7	0.18	5	1	X								X	X
V-DTCH-EWAT	Edge of water	0	0.18	4	7	X								X	X
V-DTCH-IDEN	Ditches and washes annotation	0	0.25	3	2	X								X	X
V-DTCH-TOP~	Top of ditch or wash	0	0.18	3	2	X								X	X
Underground Ductbanks (to be used when multiple systems are in one ductbank system)															
V-DBNK-MULT	Ductbank	EUDUCX	0.35	83	42	X		X	X	X				X	X
V-DBNK-MULT-IDEN	Identifier tags, symbol modifier and text	0	0.25	83	42	X		X	X	X				X	X
Habitats/Landforms															
V-ECCO-BURR	Burrow	0	0.35	4	7	X									
V-ECCO-DENS	Den	0	0.35	4	7	X									
V-ECCO-GATR	Gator hole	2	0.25	6	5	X									
V-ECCO-HUMK	Hummocks	0	0.25	6	5	X									
V-ECCO-IDEN	Habitat annotation	0	0.25	2	4	X									
V-ECCO-NEST	Nest, nesting tree	0	0.35	4	7	X									
V-ECCO-PRCH	Perch/nesting hole	0	0.35	4	7	X									

Discipline: Survey/Mapping

Model File Layers/Levels

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Flood Hazard Area															
V-FLHA-025Y	25 year mark	6	0.25	6	5	X									
V-FLHA-050Y	50 year mark	3	0.25	2	4	X									
V-FLHA-100Y	100 year mark	0	0.25	6	5	X									
V-FLHA-200Y	200 year mark	2	0.25	2	4	X									
V-FLHA-500Y	500 year mark	7	0.25	6	5	X									
V-FLHA-IDEN	Flood hazard area annotation	0	0.25	2	4	X									
Floodwalls															
V-FLOD-BASE	Floodwall base of wall	0	0.35	20	6	X									
V-FLOD-BASE-IDEN	Floodwall base of wall annotation	0	0.25	20	6	X									
V-FLOD-CNTR	Floodwall centerline	7	0.18	20	6	X									X
V-FLOD-CNTR-IDEN	Floodwall centerline annotation	0	0.25	20	6	X									X
V-FLOD-DRAN	Floodwall toe drain	0	0.25	6	5	X								X	X
V-FLOD-DRAN-IDEN	Floodwall toe drain annotation	0	0.25	6	5	X								X	X
V-FLOD-PILE	Floodwall sheet piling	0	0.35	22	22	X								X	X
V-FLOD-PILE-IDEN	Floodwall sheet piling annotation	0	0.25	22	22	X								X	X
V-FLOD-TOE~	Floodwall toe outline	0	0.25	4	7	X								X	X
V-FLOD-TOP~	Floodwall top of wall	0	0.35	2	4	X								X	X
V-FLOD-TOP~-IDEN	Floodwall top of wall annotation	0	0.25	20	6	X								X	X
Liquid Fuel															
V-FUEL-ABND-PIPE	Abandoned piping	2	0.25	6	5	X		X			X			X	X
V-FUEL-BERM	Berms for retaining fuel in case of major tank/line rupture	0	0.25	6	5						X				
V-FUEL-DEFL-PIPE	Defueling piping	0	0.25	6	5						X				
V-FUEL-DEVC	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators and valves	0	0.25	6	5						X				
V-FUEL-FLOW	Flow direction arrows	0	0.25	6	5						X				
V-FUEL-FTTG	Caps, crosses, and tees	0	0.25	6	5						X				
V-FUEL-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-FUEL-JBOX	Junction boxes, manholes, handholes, test boxes	0	0.25	1	3	X		X			X				
V-FUEL-MAIN-PIPE	Main fuel piping	LIQPET	0.25	6	5	X		X			X			X	X
V-FUEL-METR	Meters	0	0.25	3	2						X				
V-FUEL-PITS-HYDT	Hydrant control pits	0	0.25	3	2						X				
V-FUEL-PITS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	3	2						X				
V-FUEL-PITS-VENT	Vent pits	0	0.25	3	2						X				
V-FUEL-PITS-VALV	Valve pits	0	0.25	3	2						X				
V-FUEL-SERV-PIPE	Service piping	0	0.25	6	5						X				
V-FUEL-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4						X				
V-FUEL-STNS-PUMP	Booster pump stations	0	0.25	6	5						X				
V-FUEL-TANK	Fuel tanks	0	0.25	3	2	X		X			X				
V-FUEL-TRCH	Fuel line trench	0	0.25	3	2						X				
Grade Linework															
V-GRAD-AFTR	After dredge depth	0	0.35	2	4		X							X	X
V-GRAD-EXST	Existing grade, ground line	3	0.35	6	5									X	X
V-GRAD-EXST-BASE	Base survey	2	0.18	22	22		X							X	X
V-GRAD-EXST-SYR1	Survey year one or area one	4	0.18	6	5									X	X
V-GRAD-EXST-SYR2	Survey year two or area two	1	0.18	2	4									X	X
V-GRAD-EXST-SYR3	Survey year three or area three	6	0.18	3	2									X	X

Discipline: Survey/Mapping

Model File Layers/Levels

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V-GRAD-EXST-SYR4	Survey year four or area four	3	0.18	113	16									X	X
V-GRAD-IDEN	Grade annotation	0	0.25	2	4		X							X	X
V-GRAD-PRED	Pre-dredge	0	0.35	2	4		X							X	X
V-GRAD-SCLN	Stability control line	7	0.35	5	1									X	X
Grid Lines															
V-GRID-FRAM	Frame	0	0.35	4	7									X	X
V-GRID-MAJR	Major grid lines	1	0.25	8	9									X	X
V-GRID-MINR	Minor grid lines	1	0.18	8	9									X	X
V-GRID-TEXT	Border text, annotation	0	0.25	2	4									X	X
Geothermal Heat Pump System															
V-GTHP-EQPM	Geothermal heat pump system equipment	0	0.25	203	45							X			
V-GTHP-IDEN	Geothermal heat pump annotation	0	0.35	2	4							X			
V-GTHP-RETN-PIPE	Geothermal heat pump system return piping	0	0.35	203	45							X			
V-GTHP-SUPP-PIPE	Geothermal heat pump system supply piping	0	0.35	203	45							X			
High Temperature/Chilled Water System															
V-HTCW-ABND-PIPE	Abandoned piping	2	0.18	1	3	X		X				X		X	X
V-HTCW-CWTR-MAIN	Main chilled water piping	0	0.25	163	41							X			
V-HTCW-CWTR-PLNT	Chilled water plant	0	0.25	163	41							X			
V-HTCW-CWTR-SERV	Chilled water service piping	0	0.18	163	41							X			
V-HTCW-DEVC	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves	0	0.25	6	5							X			
V-HTCW-FLOW	Flow direction arrows	0	0.18	3	2							X			
V-HTCW-FTTG	Caps and flanges	0	0.25	6	5							X			
V-HTCW-HWTR-MAIN	Main high temperature piping	0	0.25	113	16							X			
V-HTCW-HWTR-PLNT	High temperature water plant	0	0.25	113	16							X			
V-HTCW-HWTR-SERV	High temperature service piping	0	0.18	113	16							X			
V-HTCW-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X				X		X	X
V-HTCW-JBOX	Junction boxes, manholes, handholes, test boxes	0	0.18	1	3	X		X				X			
V-HTCW-LWTR-MAIN	Main low temperature piping	0	0.25	1	3							X			
V-HTCW-LWTR-SERV	Low temperature service piping	0	0.18	1	3							X			
V-HTCW-PITS	Valve pits/vaults, steam pits	0	0.18	3	2							X			
V-HTCW-PLNT-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4							X			
V-HTCW-RETN-PIPE	Return for all HTCW lines	0	0.18	5	1							X			
V-HTCW-STEM-MAIN	Main steam piping	0	0.25	113	16	X		X				X		X	X
V-HTCW-STEM-SERV	Steam service piping	0	0.18	113	16							X			
V-HTCW-STNS-IDEN	Pump station identifier tags, symbol modifier, and text	0	0.25	6	5							X			
V-HTCW-STNS-PUMP	Pump stations	0	0.25	6	5							X			
Industrial Waste Water															
V-INDW-ABND-PIPE	Abandoned piping	2	0.25	6	5	X		X			X			X	X
V-INDW-DEVC	Grit chambers, meters, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves	0	0.25	6	5						X				
V-INDW-FLOW	Flow direction arrows	0	0.25	6	5						X				
V-INDW-FTTG	Caps and cleanouts	0	0.25	6	5						X				
V-INDW-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-INDW-JBOX	Junction boxes and manholes	0	0.25	1	3	X		X			X				
V-INDW-LAGN	Lagoons	0	0.25	6	5	X		X			X				
V-INDW-LAGN-IDEN	Identifier tags, symbol modifier, and text	0	0.25	6	5						X				
V-INDW-MAIN-PIPE	Main industrial waste water piping	IWASTE	0.25	6	5	X		X			X			X	X
V-INDW-PLNT	Treatment plants	0	0.25	6	5						X				

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V-INDW-SERV-PIPE	Industrial waste water service piping	0	0.25	1	3						X				
V-INDW-SIGN	Surface markers/signs	0	0.25	1	3						X				
V-INDW-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4						X				
V-INDW-STNS-LIFT	Lift stations	0	0.25	6	5	X		X			X				
Irrigation															
V-IRRG-EQPM	Irrigation equipment (e.g., controllers, valves, etc.)	0	0.25	6	5	X	X				X				
V-IRRG-IDEN	Irrigation annotation	0	0.25	2	4	X	X				X			X	X
V-IRRG-PIPE	Irrigation piping	0	0.25	6	5	X	X				X			X	X
V-IRRG-WELL	Irrigation wells	0	0.18	3	2						X				
Joints															
V-JNTS-CNSL	Construction joints - longitudinal	0	0.25	6	5	X									
V-JNTS-CNST	Construction joints - transverse	0	0.25	6	5	X									
V-JNTS-CNTL	Contraction joints - longitudinal	0	0.25	2	4	X									
V-JNTS-CNTT	Contraction joints - transverse	0	0.25	2	4	X									
V-JNTS-EDGE	Thickened edges	0	0.25	4	7	X									
V-JNTS-EXPJ	Expansion joints	0	0.25	12	27	X									
V-JNTS-IDEN	Joint annotation	0	0.25	2	4	X									
Levees															
V-LEVE-BANK-IDEN	Levee top of bank annotation	0	0.25	20	6	X									X
V-LEVE-TOPB	Levee top of bank	0	0.25	20	6	X									X
V-LEVE-BERM	Existing berms	0	0.25	6	5	X									X
V-LEVE-BNCH	Levee bench design feature lines (breaklines form DTMs)	0	0.25	20	6	X									X
V-LEVE-BNCH-IDEN	Levee bench annotation	0	0.18	2	4	X									X
V-LEVE-BRRW	Borrow limits	0	0.35	4	7	X									X
V-LEVE-CNTR	Levee centerline	7	0.18	20	6	X									X
V-LEVE-CNTR-IDEN	Levee centerline annotation	0	0.25	20	6	X									X
V-LEVE-IDEN	Levee annotation	0	0.25	2	4	X									X
V-LEVE-OTLN	Levee outline	0	0.35	4	7	X									X
V-LEVE-SLOP	Levee slope indicator with annotation	0	0.25	2	4	X									X
V-LEVE-STAN	Levee stationing	0	0.25	2	4	X									X
V-LEVE-TOE~	Levee toe	2	0.25	20	6	X									X
V-LEVE-TOE~-IDEN	Levee toe annotation	0	0.18	20	6	X									X
Lights															
V-LITE-EXTR	Exterior lights	0	0.35	203	45			X	X						
V-LITE-EXTR-IDEN	Exterior light identifier tags, symbol modifiers, and text	0	0.25	203	45			X	X						
Military Ranges															
V-MILR-BATP	Battle positions	0	0.35	4	7	X									
V-MILR-CAMS	Range cameras	0	0.25	6	5	X									
V-MILR-FOXH	Fox holes and pits	0	0.25	6	5	X									
V-MILR-MATS	Moving army targets	0	0.35	4	7	X									
V-MILR-MITS	Moving infantry targets	0	0.35	4	7	X									
V-MILR-MITS-IDEN	Moving infantry targets annotation	0	0.25	2	4	X									
V-MILR-PUTS	Pop up targets	0	0.35	4	7	X									
V-MILR-PUTS-IDEN	Pop up targets annotation	0	0.25	2	4	X									
V-MILR-SATS	Stationary army targets	0	0.35	4	7	X									
V-MILR-SATS-IDEN	Stationary army targets annotation	0	0.25	2	4	X									
V-MILR-SITS	Stationary infantry targets	0	0.35	4	7	X									

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-MILR-SITS-IDEN	Stationary infantry targets annotation	0	0.25	2	4	X									
Natural Gas															
V-NGAS-ABND-PIPE	Abandoned piping	2	0.25	6	5	X		X			X			X	X
V-NGAS-DEVC	Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, drip pots, taps, and valves	0	0.25	6	5						X				
V-NGAS-DEVC-IDEN	Identifier tags, symbol modifier, and text	0	0.25	6	5						X				
V-NGAS-FLOW	Flow direction arrows	0	0.25	6	5						X				
V-NGAS-FTTG	Caps, crosses, and tees	0	0.25	6	5						X				
V-NGAS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-NGAS-MAIN-PIPE	Main natural gas piping	NTGASX	0.25	6	5	X		X			X			X	X
V-NGAS-METR	Meters	0	0.25	3	2						X				
V-NGAS-PITS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	3	2						X				
V-NGAS-PITS-VENT	Vent pits	0	0.25	3	2						X				
V-NGAS-PITS-VALV	Valve pits/boxes	0	0.25	3	2						X				
V-NGAS-SERV-PIPE	Service piping	0	0.25	1	3						X				
V-NGAS-SIGN	Surface markers/signs	0	0.25	1	3						X				
V-NGAS-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4						X				
V-NGAS-STNS-PUMP	Compressor stations	0	0.25	6	5						X				
V-NGAS-STNS-REDC	Reducing stations	0	0.25	6	5						X				
V-NGAS-TANK	Tanks	0	0.18	3	2	X		X			X				
Obstructions															
V-OBST-AIRS	Airspace obstructions	0	0.25	3	2										X
V-OBST-AIRS-IDEN	Airspace obstruction annotation	0	0.25	2	4										X
V-OBST-UWTR	Underwater obstructions (e.g., sunken ship, barge, etc.)	2	0.25	1	3		X								X
V-OBST-UWTR-IDEN	Underwater obstruction annotation	0	0.25	2	4		X								X
Overrun Areas															
V-OVRN-CNTR	Centerlines	7	0.18	1	3										X
V-OVRN-CNTR-IDEN	Centerline annotation	0	0.25	2	4										X
V-OVRN-IDEN	Airfield overrun area - annotation	0	0.25	2	4									X	X
V-OVRN-OTLN	Airfield overrun area - outlines	0	0.25	4	7									X	X
V-OVRN-SHLD-MRKG	Shoulder markings	0	0.25	4	7										X
Pads (Arm/Disarm/Calibration, etc.)															
V-PADS-CNTR	Centerlines	7	0.18	1	3										X
V-PADS-CNTR-IDEN	Centerline annotation	0	0.25	2	4										X
V-PADS-IDEN	Pads - annotation	0	0.25	2	4									X	X
V-PADS-OTLN	Pad - outlines	0	0.25	4	7									X	X
V-PADS-SHLD	Shoulders with annotation	0	0.18	2	4										X
Power															
V-POWR-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	0	0.35	23	46				X						
V-POWR-IDEN	Power annotation	0	0.35	2	4	X		X	X						
V-POWR-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	0	0.35	83	42				X						
V-POWR-POLE	Power poles	0	0.35	203	45	X		X	X						
V-POWR-POLE-GUYS	Guying equipment	0	0.35	203	45				X						
V-POWR-POLE-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	203	45				X						
V-POWR-SUBS	Other substation equipment	0	0.35	23	46				X						
V-POWR-SWCH	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches	0	0.35	163	41				X						
V-POWR-XFMR-PADM	Pad mounted transformers	0	0.35	23	46				X						
V-POWR-XFMR-POLM	Pole mounted transformers	0	0.35	23	46				X						

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
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Primary Electrical Cables															
V-PRIM-OVHD	Overhead electrical utility lines	EPARX	0.35	4	7	X		X	X					X	X
V-PRIM-OVHD-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	4	7	X		X	X					X	X
V-PRIM-UGND	Underground electrical utility lines	EPUGX	0.35	4	7	X		X	X					X	X
V-PRIM-UGND-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	4	7	X		X	X					X	X
Parking Lots															
V-PRKG-CNTR	Parking lot centerlines	7	0.18	1	3	X		X							
V-PRKG-CNTR-IDEN	Parking lot centerline annotation	0	0.18	1	3	X		X							
V-PRKG-CURB	Curbs and gutters	0	0.25	3	2	X		X							
V-PRKG-DRAN	Drainage slope indications	0	0.25	1	3	X		X							
V-PRKG-FIXT	Parking lot fixtures (e.g., wheel stops, parking meters)	0	0.25	91	106	X		X						X	X
V-PRKG-FLNE	Fire lanes	0	0.18	1	3	X		X						X	X
V-PRKG-IDEN	Parking lot annotation	0	0.25	6	5	X		X						X	X
V-PRKG-MRKG	Pavement markings	0	0.25	2	4	X		X							
V-PRKG-OTLN	Parking lot outlines	0	0.35	4	7	X		X							
V-PRKG-SIGN	Signs	0	0.25	2	4	X		X							
Property															
V-PROP-BRNG	Bearings and distance labels	0	0.35	6	5	X		X							X
V-PROP-ESMT	Easements	CONEMT	0.50	7	0	X		X							X
V-PROP-IDEN	Property annotation	0	0.25	6	5	X		X							X
V-PROP-LINE	Property lines (Existing recorded plats)	PROPL	0.35	2	4	X		X							X
V-PROP-QTRS	Quarter lines	1	0.35	6	5	X		X							X
V-PROP-RWAY	Right of ways	6	0.50	7	0	X		X							X
V-PROP-SECT	Section lines	7	0.35	6	5	X		X							X
V-PROP-SECT-IDEN	Section lines annotation	0	0.25	6	5	X		X							X
V-PROP-SUBD	Subdivision (interior) lines	0	0.25	1	3	X		X							X
V-PROP-SXTS	Sixteenth lines (40 lines)	16THLN	0.35	6	5	X		X							X
V-PROP-TSHP	Township/range lines	4	0.35	6	5	X		X							X
V-PROP-TSHP-IDEN	Township/range lines annotation	0	0.25	6	5	X		X							X
Pavements															
V-PVMT-ASPH	Pavement pattern - asphalt	0	0.18	8	9	X									
V-PVMT-CONC	Pavement pattern - concrete	0	0.18	8	9	X									
V-PVMT-GRVL	Pavement pattern - gravel	0	0.18	8	9	X									
V-PVMT-IDEN	Road, parking lot, railroad, airfield pavement annotation	0	0.25	2	4	X								X	X
V-PVMT-MRKG	Pavement markings	0	0.35	2	4	X									
V-PVMT-PATT	Joint patterns, text and dimensions	0	0.18	8	9	X									
Railroads															
V-RAIL-CNTR	Railroad track centerlines	7	0.18	1	3	X		X						X	X
V-RAIL-CNTR-IDEN	Railroad track centerline annotation	0	0.25	1	3	X		X						X	X
V-RAIL-EQPM	Railroad equipment (e.g., gates, signals)	0	0.25	91	106	X		X						X	X
V-RAIL-IDEN	Railroad - annotation	0	0.25	2	4	X		X						X	X
V-RAIL-TRAK	Railroad tracks	RAILRD	0.25	2	4	X		X						X	X
Rivers															
V-RIVR-TOPB	Top of river bank	0	0.25	5	1	X	X							X	X
V-RIVR-BOTM	River bottom	0	0.25	5	1	X	X							X	X
V-RIVR-CNTR	Centerline of river	7	0.18	1	3	X	X							X	X
V-RIVR-EDGE	River edge	0	0.35	5	1	X	X							X	X

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
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V-RIVR-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	2	4	X	X							X	X
Roads, Streets, and Highways															
V-ROAD-ASPH	Road outlines - asphalt surface	0	0.18	8	9	X		X							X
V-ROAD-CNTR	Road centerlines	7	0.18	1	3	X		X							X
V-ROAD-CNTR-IDEN	Road centerline annotation	0	0.18	1	3	X		X							X
V-ROAD-CONC	Road outlines - concrete surface	0	0.18	7	0	X		X							X
V-ROAD-CURB	Curbs and gutters	0	0.25	6	5	X		X							X
V-ROAD-GRAL	Guard rails	GUARD	0.25	6	5	X		X							X
V-ROAD-GRVL	Road outlines - gravel surface	0	0.18	20	6	X		X							X
V-ROAD-IDEN	Road, street, highway annotation	0	0.25	6	5	X		X						X	X
V-ROAD-MRKG	Pavement markings	0	0.25	2	4	X		X							X
V-ROAD-OTLN	Road outlines	0	0.25	4	7	X		X							X
V-ROAD-PATT	Joint patterns, text and dimensions	0	0.18	8	9	X									X
V-ROAD-SHLD	Roadway shoulders	0	0.25	6	5	X		X							X
V-ROAD-SIGN	Signs	0	0.18	1	3	X									X
V-ROAD-UPVD	Road outlines - unpaved surface	0	0.18	3	2	X									X
Riprap and Other Permanent Erosion Control Items															
V-RRAP-GABN	Gabions	V	0.18	1	3	X	X								
V-RRAP-MATS	Articulated concrete mats	V	0.18	3	2	X	X								
V-RRAP-RVMT	Revetments	V	0.18	1	3	X	X								
V-RRAP-WEIR	Weirs	V	0.18	3	2	X	X								
Runways															
V-RUNW-BLST	Blast pad and stopway markings	0	0.25	1	3	X								X	X
V-RUNW-CNTR	Centerlines	7	0.25	1	3	X									
V-RUNW-CNTR-MRKG	Centerline markings	0	0.25	1	3	X									
V-RUNW-DISP	Displaced threshold markings	0	0.25	1	3	X									
V-RUNW-DIST	Fixed distance markings	0	0.25	1	3	X									
V-RUNW-EDGE	Airfield runway edges	0	0.25	6	5	X									
V-RUNW-IDEN	Airfield runway annotation	0	0.25	2	4	X								X	X
V-RUNW-SHLD	Shoulder markings	0	0.25	6	5	X									
V-RUNW-SIDE	Side stripes	0	0.25	4	7	X									
V-RUNW-TDZM	Touchdown zone markers	0	0.25	6	5	X									
V-RUNW-THRS	Threshold markers	0	0.25	6	5	X									
Secondary Electrical Cables															
V-SECD-OVHD	Overhead electrical utility lines	ESARX	0.35	163	41	X		X	X					X	X
V-SECD-OVHD-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	163	41	X		X	X					X	X
V-SECD-UGND	Underground electrical utility lines	ESUGX	0.35	163	41	X		X	X					X	X
V-SECD-UGND-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	163	41	X		X	X					X	X
Site Features															
V-SITE-EWAT	Edge of water	0	0.35	162	33	X		X							
V-SITE-FENC	Fences and handrails	0, FENCE	0.25	6	5	X		X							
V-SITE-FENC-IDEN	Fence, handrail, ramp, and trail annotation	0	0.25	6	5	X		X							
V-SITE-FLDS	Stump fields	0	0.25	1	3		X								
V-SITE-IDEN	Existing site feature/structure annotation	0	0.25	6	5	X	X	X						X	X
V-SITE-OTLN	Existing site features (play structures, bike racks, benches, recreational equipment)	0	0.50	4	7	X		X						X	X
V-SITE-ROCK	Rock and rock outcroppings, boulders and cobble	0	0.25	1	3	X		X							
V-SITE-STRC	Structures (bridges, sheds, foundation pads, footings, etc.)	0	0.25	22	22	X		X						X	X

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
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V-SITE-STRS	Stairs and ramps	0	0.25	6	5	X		X							
V-SITE-VEGE	Existing treelines and vegetation	0, TREEL	0.35	82	18	X		X							
V-SITE-VEGE-IDEN	Existing treelines and vegetation - identification	0	0.35	82	18	X		X							
V-SITE-WALK	Walks, trails, and bicycle paths	0	0.25	2	4	X		X							
V-SITE-WATR	Water features	0	0.35	162	33	X		X							
Special Systems															
V-SPCL-SYST	Special systems (UMCS, EMCS, CATV, etc.)	0	0.35	203	45				X						X
V-SPCL-SYST-IDEN	Special systems (UMCS, EMCS, CATV, etc.) identifier tags, symbol modifier, and text	0	0.25	203	45				X						X
V-SPCL-TRAF	Traffic signal system	0	0.35	203	45				X						X
V-SPCL-TRAF-IDEN	Traffic signal identifier tags, symbol modifier, and text	0	0.25	203	45				X						X
Sanitary Sewer															
V-SSWR-ABND-PIPE	Abandoned piping	2	0.25	6	5	X		X			X			X	X
V-SSWR-DEVC	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	0	0.25	6	5						X				
V-SSWR-DEVC-IDEN	Identifier tags, symbol modifier, and text	0	0.18	6	5						X				X
V-SSWR-FILT	Filtration beds	0	0.25	3	2						X				X
V-SSWR-FILT-IDEN	Identifier tags, symbol modifier, and text	0	0.25	3	2						X				X
V-SSWR-FLOW	Flow direction arrows	0	0.25	6	5						X				X
V-SSWR-FTTG	Caps and cleanouts	0	0.25	6	5						X				X
V-SSWR-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-SSWR-JBOX	Junction boxes and manholes	0	0.25	1	3	X		X			X				X
V-SSWR-JBOX-IDEN	Identifier tags, symbol modifier, and text	0	0.25	1	3						X				X
V-SSWR-LAGN	Lagoons	0	0.25	3	2	X		X			X				X
V-SSWR-LEAC	Leach field	0	0.25	3	2						X				X
V-SSWR-MAIN-PIPE	Sanitary sewer piping	SSWAFX	0.25	6	5	X		X			X			X	X
V-SSWR-NITF	Nitrification drain fields	0	0.25	3	2	X		X			X				X
V-SSWR-PLNT	Treatment plants	0	0.25	6	5	X		X			X				X
V-SSWR-SERV-PIPE	Sanitary sewer service piping	0	0.25	1	3						X				X
V-SSWR-SIGN	Surface markers/signs	0	0.25	1	3						X				X
V-SSWR-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4						X				X
V-SSWR-STNS-PUMP	Booster pump stations	0	0.25	6	5	X		X			X				X
V-SSWR-TANK	Septic tanks	0	0.25	3	2	X		X			X				X
Storm Sewer															
V-STRM-ABND-PIPE	Abandoned piping	2	0.25	6	5	X		X			X			X	X
V-STRM-AFFF	AFFF lagoon/detention pond	0	0.25	3	2						X				X
V-STRM-CHUT	Chutes and concrete erosion control structures	0	0.25	1	3						X				X
V-STRM-CULV	Culverts	CULVRT	0.25	3	2	X		X			X				X
V-STRM-DEVC	Downspouts, flumes, oil/water separators, and flap gates	0	0.25	6	5						X				X
V-STRM-FLOW	Flow direction arrows	0	0.25	6	5						X				X
V-STRM-FMON	Flow monitoring station	0	0.25	6	5						X				X
V-STRM-FTTG	Caps and cleanouts	0	0.25	6	5						X				X
V-STRM-HWAL	Headwalls and endwalls	0	0.35	7	0	X		X			X				X
V-STRM-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-STRM-INLT	Inlets (curb, surface, and catch basins)	0	0.25	3	2	X		X			X				X
V-STRM-LAGN	Lagoons, ponds, watersheds, and basins	0	0.25	3	2	X		X			X				X
V-STRM-MAIN-PIPE	Storm sewer piping	STRAFX	0.25	6	5	X		X			X			X	X
V-STRM-MHOL	Manholes	0	0.25	1	3	X		X			X				X
V-STRM-ROOF	Roof drain line	0	0.25	3	2						X				X

Discipline: Survey/Mapping

Model File Layers/Levels

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V-STRM-SERV-PIPE	Storm sewer service piping	0	0.25	1	3	X		X			X				X
V-STRM-SIGN	Surface markers/signs	0	0.25	1	3						X				X
V-STRM-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4						X				X
V-STRM-STNS-PUMP	Pump stations	0	0.25	6	5						X				X
V-STRM-SUBS-PIPE	Subsurface drain piping	0	0.25	3	2						X				X
Survey															
V-SURV-DATA	Survey data (benchmarks and horizontal control points or monuments)	0	0.25	6	5	X	X	X							X
V-SURV-IDEN	Survey, baseline, and control line annotation	0	0.25	6	5	X	X	X							X
V-SURV-LINE	Survey, baseline, and control line	2	0.25	4	7	X	X	X							X
V-SURV-SYMB	Survey line symbol (PIs)	0	0.35	2	4	X	X	X							X
Taxiways															
V-TAXI-CNTR	Centerlines	7	0.18	1	3	X									
V-TAXI-CNTR-IDEN	Centerline annotation	0	0.25	2	4	X									
V-TAXI-CNTR-MRKG	Centerline markings	0	0.18	1	3	X									
V-TAXI-EDGE	Edge markings	0	0.25	4	7	X									
V-TAXI-HOLD	Holding lines	0	0.25	2	4	X									
V-TAXI-IDEN	Taxiway - annotation	0	0.25	2	4	X								X	X
V-TAXI-OTLN	Taxiway - outlines	0	0.25	4	7	X								X	X
V-TAXI-SHLD	Shoulders with annotation	0	0.25	2	4	X									
Topography															
V-TOPO-BKLN	Breaklines	4	0.35	7	0	X	X								X
V-TOPO-BKLN-COMM	Subsurface utilities communications breakline	COMUGX	0.35	7	0	X	X								X
V-TOPO-BKLN-DOMW	Subsurface utilities water breakline	WATRX	0.35	7	0	X	X								X
V-TOPO-BKLN-ELEC	Subsurface utilities electric breakline	EPUGX	0.35	7	0	X	X								X
V-TOPO-BKLN-FUEL	Subsurface utilities liquid fuel breakline	LIQPET	0.35	7	0	X	X								X
V-TOPO-BKLN-NGAS	Subsurface utilities natural gas breakline	NTGASX	0.35	7	0	X	X								X
V-TOPO-BKLN-SSWR	Subsurface utilities sanitary sewer breakline	SSWAFX	0.35	7	0	X	X								X
V-TOPO-BKLN-STRM	Subsurface utilities storm sewer breakline	STRAFX	0.35	7	0	X	X								X
V-TOPO-BNDY-EXTR	Surface exterior boundary	0	0.18	3	2	X	X								X
V-TOPO-BNDY-INTR	Surface interior boundary	2	0.18	1	3	X	X								X
V-TOPO-BORE	Boring locations and text	0	0.25	6	5	X	X								X
V-TOPO-COOR	Coordinate grid text annotation	0	0.25	122	23	X	X								X
V-TOPO-COOR-LALO	Latitude and longitude grid ticks	0	0.18	3	2	X	X								X
V-TOPO-COOR-STAT	State Plane coordinate ticks	0	0.18	3	2	X	X								X
V-TOPO-COOR-UTM~	UTM coordinate ticks	0	0.18	3	2	X	X								X
V-TOPO-DTMO	DTM obscure area boundary	0	0.25	6	5	X	X								X
V-TOPO-DTMP	DTM points	0	0.25	6	5	X	X								X
V-TOPO-DTMT	DTM triangles	0	0.25	22	22	X	X								X
V-TOPO-MAJR	Major contours	0	0.25	2	4	X	X								X
V-TOPO-MAJR-IDEN	Major contours - annotation	0	0.25	2	4	X	X								X
V-TOPO-MINR	Minor contours	0	0.18	3	2	X	X								X
V-TOPO-MINR-IDEN	Minor contours - annotation	0	0.18	3	2	X	X								X
V-TOPO-PERI	Surface perimeter	0	0.18	3	2	X	X								X
V-TOPO-SHAP	Inroads generated shapes/lines	0	0.18	1	3										X
V-TOPO-SHOR	Shorelines, land features, and references	0	0.25	4	7	X	X								X
V-TOPO-SLOP-FILL	Cut/fill slopes	0	0.25	2	4	X	X								X
V-TOPO-SLOP-IDEN	Cut/fill slope, top/toe slope annotation	0	0.25	2	4	X									X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-TOPO-SLOP-TOPT	Top/toe slopes	0	0.25	6	5	X									X
V-TOPO-SOUN	Soundings and overbanks	0	0.18	V	V		X								X
V-TOPO-SPOT	Spot elevations	0	0.25	2	4	X	X								X
V-TOPO-VOID	Surface void region	0	0.18	1	3	X	X								X
V-TOPO-WATR	Water level reference (e.g., LWRP, after-grading LWRP, SWP, etc.)	0	0.35	V	V	X	X								X
Airfield Traffic Areas															
V-TRAF-IDEN	Airfield traffic area annotation	0	0.25	2	4	X									
V-TRAF-TYPA	Type A traffic area	4	0.35	4	7	X									
V-TRAF-TYPB	Type B traffic area	6	0.35	4	7	X									
V-TRAF-TYPC	Type C traffic area	1	0.35	4	7	X									
Wetlands															
V-WETL-BOGS	Bogs	0	0.25	6	5	X									X
V-WETL-FENS	Fens	0	0.25	2	4	X									X
V-WETL-IDEN	Wetland annotation	0	0.25	2	4	X									X
V-WETL-MRSH	Fresh water marshes	0	0.25	162	33	X									X
V-WETL-MRSH-SALT	Tidal saltwater marshes	0	0.25	162	33	X									X
V-WETL-MRSH-TIDL	Tidal freshwater marsh	0	0.25	162	33	X									X
V-WETL-PCSN	Pocosins	0	0.25	6	5	X									X
V-WETL-PHOL	Vernal pools, playas, prairie potholes, wet meadows, and wet prairies	0	0.25	6	5	X									X
V-WETL-RPRN	Riparian forested wetlands	0	0.25	162	33	X									X
V-WETL-SLGH	Sloughs	0	0.25	162	33	X									X
V-WETL-SWMP	Swamps	0	0.25	162	33	X									X
Sections															
V-SECT-IDEN	Component identification numbers	0	0.35	2	4										X
V-SECT-MBND	Material beyond section cut	0	0.18	5	1										X
V-SECT-MCUT	Material cut by section	0	0.50	4	7										X
V-SECT-PATT	Textures and hatch patterns	0	0.18	8	9										X

Note: V = Varies, NA = Not Applicable

Discipline: Geotechnical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Subsurface Investigation Plan	Boring Log	Joint Layout Plan *	Pavement Site Plan	Sections	Details
General Information											
B-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X		X	X	X	X
B-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X		X	X	X	X
B-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X
B-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X
B-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X		X	X
B-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X
B-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X		X	X	X	X
B-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X			X	X	X
B-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X
Existing Conditions											
B-EXST-BLDG	Existing building	0	0.25	1	3	X		X	X		
B-EXST-COND	Existing conditions	0	0.25	1	3	X		X	X		
Geophysical Borings											
B-BORE-CONE	Cone penetrometer test location	0	0.35	162	33	X					
B-BORE-HOLE	Geophysical boring locations	0	0.35	162	33	X					
B-BORE-IDEN	Geophysical location identification	0	0.35	2	4	X					
B-BORE-LINE	Geophysical transect lines	0	0.50	4	7	X					
B-BORE-PUSH	Direct push test location	0	0.35	162	33	X					
B-BORE-STRK	Geophysical strike line	0	0.35	162	33	X					
Consolidation Curve											
B-CONS-DATA	Consolidation curve data	0	0.25	6	5	X					
B-CONS-DATA-TEXT	Consolidation curve data text	0	0.25	6	5	X					
B-CONS-FRAM	Consolidation curve frame	0	0.50	4	7	X					
B-CONS-GRID	Consolidation curve grid	0	0.25	1	3	X					
B-CONS-GRID-TEXT	Consolidation curve grid text	0	0.25	2	4	X					
Water Content											
B-H2OC-ATTB-DATA	Water content Atterberg limits	0	0.25	3	2	X					
B-H2OC-ATTB-TEXT	Water content Atterberg limits text	0	0.25	3	2	X					
B-H2OC-GRID-MAJR	Water content major grid	0	0.25	1	3	X					
B-H2OC-GRID-MINR	Water content minor grid	1	0.18	8	9	X					
B-H2OC-GRID-TEXT	Water content grid text	0	0.25	2	4	X					
B-H2OC-MOIS-DATA	Water content moisture content points and lines	0	0.25	6	5	X					
B-H2OC-MOIS-TEXT	Water content moisture content text	0	0.25	6	5	X					
Joints											
B-JNTS-CNTJ-LONG	Construction joints - longitudinal	0	0.35	6	5			X			
B-JNTS-CNTJ-TRAV	Construction joints - transverse	0	0.35	6	5			X			
B-JNTS-CTRJ-LONG	Contraction joints - longitudinal	0	0.35	2	4			X			
B-JNTS-CTRJ-TRAV	Contraction joints - transverse	0	0.35	2	4			X			
B-JNTS-EDGE	Thickened edges	0	2.00	4	7			X			
B-JNTS-EXPJ	Expansion joints	0	0.35	12	27			X			
Logs											
B-LOGS-FDTA	Field data	0	0.25	3	2		X				
B-LOGS-FORM	Bore log form	0	V	V	V		X				
B-LOGS-FRAM	Frame for boring log and associated test data	0	0.50	4	7		X				
B-LOGS-FRAM-TEXT	Text associated with boring log frame	0	0.25	2	4		X				
B-LOGS-LDTA	Laboratory data	0	0.25	1	3		X				

Discipline: Geotechnical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Subsurface Investigation Plan	Boring Log	Joint Layout Plan *	Pavement Site Plan	Sections	Details
B-LOGS-PATT	Soil/rock patterns	0	0.18	8	9		X				
Normal Stress											
B-NORM-DATA	Normal stress data	0	0.25	6	5	X					
B-NORM-DATA-TEXT	Normal stress data text	0	0.25	6	5	X					
B-NORM-GRID-MAJR	Normal stress major grid	0	0.25	1	3	X					
B-NORM-GRID-MINR	Normal stress minor grid	1	0.18	8	9	X					
B-NORM-GRID-TEXT	Normal stress grid text	0	0.25	2	4	X					
Plasticity Chart											
B-PLAS-DATA	Plasticity chart data	0	0.25	6	5	X					
B-PLAS-DATA-TEXT	Plasticity chart data text	0	0.25	6	5	X					
B-PLAS-FRAM	Plasticity chart frame	0	0.50	4	7	X					
B-PLAS-GRID	Plasticity chart grid	0	V	V	V	X					
B-PLAS-GRID-TEXT	Plasticity chart grid text	0	V	V	V	X					
Pavements											
B-PVMT-MISM	Mismatched pavement joint	0	0.35	6	5				X		
B-PVMT-OTLN-AGSC	Outline - aggregate surface course and gravel	0	0.35	195	13				X		
B-PVMT-OTLN-HMAC	Outline - hot mix, asphaltic concrete	0	0.35	6	5				X		
B-PVMT-OTLN-PCCP	Outline - Portland cement, concrete pavement	0	0.35	2	4				X		
B-PVMT-PATT-AGSC	Pattern - aggregate surface course and gravel	0	0.18	8	9				X		
B-PVMT-PATT-HMAC	Pattern - hot mix, asphaltic concrete	0	0.18	8	9				X		
B-PVMT-PATT-PCCP	Pattern - Portland cement, concrete pavement	0	0.18	8	9				X		
B-PVMT-REIN	Reinforced pavement	0	0.35	6	5				X		
Sample Locations											
B-SAMP-AUGR	Auger sample location	0	0.35	17	67	X					
B-SAMP-CORE	Core sample location	0	0.35	17	67	X					
B-SAMP-DRVE	Drive sample (shelby split spoon) location	0	0.35	17	67	X					
B-SAMP-GRAB	Grab sample location	0	0.35	17	67	X					
B-SAMP-IDEN	Sample location identification	0	0.35	2	4	X					
B-SAMP-PERC	Percolation test hole	0	0.50	83	42	X					
B-SAMP-PITS	Test pit sample location	0	0.50	83	42	X					
B-SAMP-VERT	Vertical core hole location	0	0.35	122	23	X					
B-SAMP-WASH	Wash bored hole location	0	0.35	122	23	X					
Shear Strength vs. Normal Stress											
B-SSNS-DATA	Shear strength vs. normal stress data	0	0.25	6	5	X					
B-SSNS-DATA-TEXT	Shear strength vs. normal stress data text	0	0.25	6	5	X					
B-SSNS-FRAM	Shear strength vs. normal stress frame	0	0.50	4	7	X					
B-SSNS-GRID	Shear strength vs. normal stress grid	0	0.25	1	3	X					
B-SSNS-GRID-TEXT	Shear strength vs. normal stress grid text	0	V	2	4	X					
Shear Strength											
B-SSTR-1TST-DATA	Shear strength 1 Point Q test data	0	0.25	4	7	X					
B-SSTR-1TST-TEXT	Shear strength 1 Point Q test text	0	0.25	4	7	X					
B-SSTR-GRID-MAJR	Shear strength major grid	0	0.25	1	3	X					
B-SSTR-GRID-MINR	Shear strength minor grid	1	0.18	8	9	X					
B-SSTR-GRID-TEXT	Shear strength grid text	0	0.25	2	4	X					
B-SSTR-QTST-DATA	Shear strength Q test data	0	0.25	6	5	X					
B-SSTR-QTST-TEXT	Shear strength Q test text	0	0.25	6	5	X					
B-SSTR-RTST-DATA	Shear strength R test data	0	0.25	2	4	X					

Discipline: Geotechnical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Subsurface Investigation Plan	Boring Log	Joint Layout Plan *	Pavement Site Plan	Sections	Details
B-SSTR-RTST-TEXT	Shear strength R test text	0	0.25	2	4	X					
B-SSTR-STST-DATA	Shear strength S test data	0	0.25	5	1	X					
B-SSTR-STST-TEXT	Shear strength S test text	0	0.25	5	1	X					
B-SSTR-UTST-DATA	Shear strength UCT test data	0	0.25	3	2	X					
B-SSTR-UTST-TEXT	Shear strength UCT test text	0	0.25	3	2	X					
B-SSTR-VTST-DATA	Shear strength Vane shear test data	0	0.25	7	0	X					
B-SSTR-VTST-TEXT	Shear strength Vane shear test text	0	0.25	7	0	X					
Tabular Test											
B-TABT-DATA	Tabular test data	0	0.25	6	5	X					
B-TABT-DATA-TEXT	Tabular test data text	0	0.25	6	5	X					
B-TABT-FRAM	Tabular test data frame	0	0.50	4	7	X					
B-TABT-GRID	Tabular test data grid	0	0.25	1	3	X					
B-TABT-GRID-TEXT	Tabular test data grid text	0	V	2	4	X					
Wells											
B-WELL-ASR~	ASR wells	0	0.35	82	18	X					
B-WELL-MONT	Monitoring wells	0	0.35	82	18	X					
B-WELL-PIZO	Piezometers	0	0.35	82	18	X					
Wet Density											
B-WETD-DATA	Wet density data	0	0.25	6	5	X					
B-WETD-DATA-TEXT	Wet density data text	0	0.25	6	5	X					
B-WETD-GRID-MAJR	Wet density major grid	0	0.25	1	3	X					
B-WETD-GRID-MINR	Wet density minor grid	1	0.18	8	9	X					
B-WETD-GRID-TEXT	Wet density grid text	0	0.25	2	4	X					
Sections											
B-SECT-IDEN	Component identification numbers	0	0.35	2	4					X	
B-SECT-MBND	Material beyond section cut	0	0.18	5	1					X	
B-SECT-MCUT	Material cut by section	V	V	V	V					X	
B-SECT-PATT	Textures and hatch patterns	0	0.18	8	9					X	
B-SECT-SLOG	Stick log graphics	0	0.35	3	2					X	
Detail Information											
B-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V						X

Note: V = Varies, NA = Not Applicable

*** = Check to see if a Civil Joint Layout Plan has been developed, to avoid duplication**

Discipline: Civil

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
General Information																			
C-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X				X	X	X	X	X	X	X	X	X
C-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Alignments																			
C-ALGN-DATA	Alignment coordinates and curve data	0	0.35	3	2	X	X			X		X		X	X	X			
C-ALGN-LINE	Alignments	4	0.35	2	4	X	X	X	X	X	X	X		X	X	X			
C-ALGN-MAJR	Alignment major stationing and tick marks	0	0.35	1	3	X	X			X		X		X	X				
C-ALGN-MARK	Alignment tick marks	0	0.35	3	2	X	X					X		X	X	X			
C-ALGN-MINR	Alignment minor stationing and tick marks	0	0.18	6	5	X	X			X		X		X	X				
C-ALGN-STAT	Alignment stationing and tick marks, alignment PI stations	0	0.35	3	2	X	X			X		X		X	X	X			
C-ALGN-SYMB	Alignment symbols (PIs)	0	0.35	6	5	X	X			X		X		X	X	X			
C-ALGN-TEXT	Alignment text, annotation with associated leaders	0	0.35	2	4	X	X	X	X	X	X	X		X	X	X			
Aprons																			
C-APRN-CNTR	Apron centerlines	7	0.35	1	3									X					
C-APRN-CNTR-IDEN	Apron centerline annotation	0	0.35	2	4									X					
C-APRN-GRND	Grounding points	0	0.35	2	4									X					
C-APRN-HOLD	Holding position markings	0	0.25	1	3									X					
C-APRN-IDEN	Airfield apron - annotation	0	0.35	2	4									X		X		X	
C-APRN-MOOR	Mooring points	0	0.35	2	4									X					
C-APRN-MRKG	Apron markings	0	0.50	4	7									X					
C-APRN-OTLN	Airfield apron - outlines	0	0.50	4	7									X		X		X	
C-APRN-SECU	Security zone markings	0	0.25	1	3									X					
C-APRN-SHLD	Shoulders with annotation	0	0.35	2	4									X					
C-APRN-SHLD-MRKG	Shoulder stripes	0	0.35	2	4									X					
Beach Renourishment																			
C-BECH-BANK-TOP~	Beach top of bank	0	0.25	6	5			X	X										
C-BECH-BKLN	Beach breakline	2	0.35	5	1			X	X										
C-BECH-BLIN	Beach baseline and control line	0	0.50	4	7			X	X										
C-BECH-BLIN-IDEN	Beach baseline and control line annotation	0	0.25	4	7			X	X										
C-BECH-BNCH	Beach bench	6	0.35	22	22			X	X										
C-BECH-CNTR	Beach centerline	7	0.25	5	1			X	X										
C-BECH-CNTR-IDEN	Beach centerline annotation	0	0.25	6	5			X	X										
C-BECH-ELIN	Beach erosion control line	0	0.50	4	7			X	X										
C-BECH-ELIN-IDEN	Beach erosion control line annotation	0	0.25	6	5			X	X										
C-BECH-LIMT	Beach limit lines	0	0.50	4	7			X	X										
C-BECH-OHWM	Ordinary high water marks	0	0.35	2	4			X	X										
C-BECH-OTLN	Beach outline	0	0.25	2	4			X	X										
C-BECH-SLOP-IDEN	Beach slope indicator with annotation	0	0.25	7	0			X	X										
C-BECH-SLOP-TOP~	Beach top of slope	2	0.35	22	22			X	X										
C-BECH-SYMB	Beach symbols	0	0.18	6	5			X	X										
C-BECH-TOE~	Beach toe	3	0.50	5	1			X	X										
C-BECH-TOE~-IDEN	Beach toe annotation	0	0.25	7	0			X	X										
Buildings and Primary Structures																			
C-BLDG-DECK	Outdoor decks (attached, no roof overhead)	0	0.50	4	7	X	X	X	X	X	X								
C-BLDG-DOCK	Loading docks	0	0.50	4	7	X	X	X	X	X	X								

Discipline: Civil

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
C-BLDG-IDEN	Building and other stucture annotation	0	0.35	2	4	X	X	X	X	X	X					X		X	
C-BLDG-OTLN	Building and other structure outlines	0	0.70	7	0	X	X	X	X	X	X					X		X	
C-BLDG-OVHD	Building overhangs	0	0.50	4	7	X	X	X	X	X	X								
C-BLDG-PRCH	Porches (attached, roof overhead)	0	0.50	4	7	X	X	X	X	X	X								
Borrow Areas																			
C-BORW-IDEN	Borrow/spoil area annotation	0	0.35	2	4	X	X		X	X	X								
C-BORW-LINE	Borrow/spoil area	2	0.35	2	4	X	X		X	X	X								
Bridges																			
C-BRDG-CHRD-LOW~	Low chord	0	0.50	4	7											X		X	
C-BRDG-CNTR	Bridge centerlines	7	0.25	1	3	X				X	X	X							
C-BRDG-CTLJ	Control joints	0	0.25	4	7	X				X	X	X							
C-BRDG-DECK	Bridge deck	0	0.50	4	7	X				X	X	X				X		X	
C-BRDG-IDEN	Bridge annotation	0	0.35	2	4	X				X	X	X							
C-BRDG-OTLN	Bridge outlines	0	0.50	4	7	X				X	X	X							
C-BRDG-RLG~	Bridge railing	0	0.25	4	7	X				X	X	X				X		X	
Channels																			
C-CHAN-BANK-IDEN	Channel/canal top of bank annotation	0	0.35	2	4	X				X	X								
C-CHAN-BANK-TOP~	Channel/canal top of bank	0	0.35	2	4	X				X	X					X		X	
C-CHAN-BNCH	Channel/canal bench design feature lines (breaklines form DTMs)	0	0.35	2	4	X				X	X					X		X	
C-CHAN-BWTR	Breakwaters	0	0.35	6	5	X				X	X								
C-CHAN-CNTR	Channel centerline and survey report lines	7	0.18	5	1	X				X	X					X		X	
C-CHAN-CNTR-IDEN	Channel centerline and survey report lines - annotation	0	0.35	5	1	X				X	X								
C-CHAN-DACL	De-authorized channel limits, anchorages, etc.	0	0.35	3	2	X				X	X								
C-CHAN-DACL-IDEN	De-authorized channel limits, anchorages, etc. - annotation	0	0.35	3	2	X				X	X								
C-CHAN-DOCK	Docks, decks, floats, piers, and mooring facilities	0	0.35	6	5	X				X	X								
C-CHAN-LIMT	Channel limits, anchorages, turning basins, disposal areas, etc.	0	0.35	6	5	X				X	X								
C-CHAN-LIMT-IDEN	Channel limits, anchorages, turning basins, disposal areas, etc. - annotation	0	0.35	6	5	X				X	X								
C-CHAN-NAID	Navigation aids and text	0	0.35	V	V	X			X	X	X								
C-CHAN-SLOP-LINE	Channel cut/fill slope (Indicates cut and fill lines)	0	0.35	2	4	X				X	X								
C-CHAN-SPOL	Spoil limits	0	0.50	4	7	X				X	X								
C-CHAN-SYMB	Channel/canal symbols	0	0.35	6	5	X				X	X								
C-CHAN-TEXT	Channel/canal text, annotation with associated leaders	0	0.35	2	4	X				X	X								
C-CHAN-TOE~	Channel/canal toe	3	0.50	5	1	X				X	X					X		X	
C-CHAN-TOE~-IDEN	Channel/canal toe annotation	0	0.35	6	5	X				X	X								
C-CHAN-TURN	Turning points	0	0.35	2	4	X				X	X								
C-CHAN-WIDE	Channel/canal widener	3	0.50	4	7	X				X	X								
Domestic Water																			
C-DOMW-ABND-PIPE	Abandoned piping	2	0.35	6	5	X				X	X				X	X		X	
C-DOMW-DEVC	Connectors, faucets, reducers, regulators, vents, intake points, taps, backflow preventers, and valves	0	0.35	6	5					X	X				X				
C-DOMW-FIRE	Fire lines	FIRE	0.35	1	3					X	X				X				
C-DOMW-FTTG	Caps, cleanouts, crosses, and tees	0	0.35	6	5					X	X				X				
C-DOMW-HYDT	Hydrants	0	0.35	1	3	X				X	X				X	X		X	
C-DOMW-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X	X				X	X		X	
C-DOMW-MAIN-PIPE	Main domestic water piping	WATERL	0.35	6	5	X				X	X				X	X		X	
C-DOMW-METR	Meters	0	0.35	3	2					X	X				X				
C-DOMW-NPW~-HYDT	Non-potable hydrants/flushing hydrants	0	0.35	1	3					X	X				X				
C-DOMW-NPW~-PIPE	Non-potable water piping	NONPOT	0.35	6	5					X	X				X				
C-DOMW-PITS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	3	2					X	X				X				
C-DOMW-PITS-VENT	Vent pits	0	0.35	3	2					X	X				X				
C-DOMW-PITS-VALV	Valve pits/vaults	0	0.35	3	2	X				X	X				X	X		X	
C-DOMW-SERV-PIPE	Domestic water service piping	0	0.35	6	5					X	X				X				
C-DOMW-SIGN	Surface markers/signs	0	0.35	1	3					X	X				X				
C-DOMW-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X					X				X				

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
C-DOMW-STNS-PUMP	Booster pump stations	0	0.35	6	5	X					X				X				
C-DOMW-STNS-REDC	Pressure reducing stations	0	0.35	6	5	X					X				X				
C-DOMW-TANK	Water storage tanks	0	0.35	1	3	X					X				X				
C-DOMW-WELL	Water well houses	0	0.35	1	3	X					X				X				
Dredging																			
C-DRED-IDEN	Dredging annotation	0	0.35	2	4	X			X	X	X								
C-DRED-LIMT	Dredge limit lines	0	0.50	4	7	X			X	X	X								
C-DRED-OHWM	Ordinary high water marks	0	0.35	2	4	X			X	X	X								
Ditches or Washes																			
C-DTCH-BOTM	Bottom of ditch or wash	0, DITCH	0.25	3	2	X					X								
C-DTCH-CNTR	Centerline of ditch or wash	7	0.18	5	1	X					X								
C-DTCH-EWAT	Edge of water	0	0.25	4	7	X					X								
C-DTCH-IDEN	Ditches and washes annotation	0	0.35	3	2	X					X								
C-DTCH-TOP~	Top of ditch or wash	0	0.25	3	2	X					X								
Habitats/Landforms																			
C-ECCO-BURR	Burrow	0	0.50	4	7			X											
C-ECCO-DENS	Den	0	0.50	4	7			X											
C-ECCO-GATR	Gator hole	2	0.35	6	5			X											
C-ECCO-HUMK	Hummocks	0	0.35	6	5			X											
C-ECCO-IDEN	Habitat annotation	0	0.35	2	4			X											
C-ECCO-NEST	Nest, nesting tree	0	0.50	4	7			X											
C-ECCO-PRCH	Perch/nesting hole	0	0.50	4	7			X											
Erosion and Sediment Control (Temporary/Construction																			
C-EROS-CIPR	Culvert inlet protection	V	0.25	3	2	X	X				X								
C-EROS-CNTE	Construction entrance	V	0.35	6	5	X	X				X								
C-EROS-DDIV	Drainage divides	0	0.50	4	7	X	X				X								
C-EROS-DVDK	Diversion dike	0	0.50	4	7	X	X				X								
C-EROS-IDEN	Erosion and sediment control annotation	0	0.35	3	2	X	X				X								
C-EROS-INPR	Inlet protection	V	0.25	3	2	X	X				X								
C-EROS-SILT	Silt fence	SILT	0.35	2	4	X	X				X								
C-EROS-SILT-CHCK	Silt check	0	0.35	2	4	X	X				X								
C-EROS-SILT-TRAP	Silt trap	0	0.35	2	4	X	X				X								
C-EROS-SSLT	Super silt fence	SSILT	0.35	2	4	X	X				X								
Flood Hazard Area																			
C-FLHA-025Y	25 year mark	6	0.35	6	5	X					X								
C-FLHA-050Y	50 year mark	3	0.35	2	4	X					X								
C-FLHA-100Y	100 year mark	0	0.35	6	5	X					X								
C-FLHA-200Y	200 year mark	2	0.35	2	4	X					X								
C-FLHA-500Y	500 year mark	7	0.35	6	5	X					X								
C-FLHA-IDEN	Flood hazard area annotation	0	0.35	2	4	X					X								
Floodwalls																			
C-FLOD-BASE	Floodwall base of wall	0	0.50	20	6	X					X								
C-FLOD-BASE-IDEN	Floodwall base of wall annotation	0	0.35	20	6	X					X								
C-FLOD-CNTR	Floodwall centerline	7	0.18	20	6	X					X							X	
C-FLOD-CNTR-IDEN	Floodwall centerline annotation	0	0.35	20	6	X					X							X	
C-FLOD-DRAN	Floodwall toe drain	0	0.35	6	5	X					X					X		X	
C-FLOD-DRAN-IDEN	Floodwall toe drain annotation	0	0.35	6	5	X					X					X		X	
C-FLOD-PILE	Floodwall sheet piling	0	0.50	22	22	X					X					X		X	
C-FLOD-PILE-IDEN	Floodwall sheet piling annotation	0	0.35	22	22	X					X					X		X	
C-FLOD-TOE~	Floodwall toe outline	0	0.35	4	7	X					X					X		X	
C-FLOD-TOP~	Floodwall top of wall	0	0.50	2	4	X					X					X		X	
C-FLOD-TOP~-IDEN	Floodwall top of wall annotation	0	0.35	20	6	X					X					X		X	
Liquid Fuel																			

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C-FUEL-ABND-PIPE	Abandoned piping	2	0.35	6	5	X				X					X	X		X	
C-FUEL-BERM	Berms for retaining fuel in case of major tank/line rupture	0	0.35	6	5										X				
C-FUEL-DEFL-PIPE	Defueling piping	0	0.35	6	5										X				
C-FUEL-DEVC	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves	0	0.35	6	5										X				
C-FUEL-FLOW	Flow direction arrows	0	0.35	6	5										X				
C-FUEL-FTTG	Caps, crosses, and tees	0	0.35	6	5										X				
C-FUEL-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X					X	X		X	
C-FUEL-JBOX	Junction boxes, manholes, handholes, test boxes	0	0.35	1	3										X				
C-FUEL-MAIN-PIPE	Main fuel piping	LIQPET	0.35	6	5	X				X					X	X		X	
C-FUEL-METR	Meters	0	0.35	3	2										X				
C-FUEL-PITS-HYDT	Hydrant control pits	0	0.35	3	2	X				X					X	X		X	
C-FUEL-PITS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	3	2										X				
C-FUEL-PITS-VENT	Vent pits	0	0.35	3	2										X				
C-FUEL-PITS-VALV	Valve pits	0	0.35	3	2	X				X					X	X		X	
C-FUEL-SERV-PIPE	Service piping	0	0.35	6	5										X				
C-FUEL-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4										X				
C-FUEL-STNS-PUMP	Booster pump stations	0	0.35	6	5										X				
C-FUEL-TANK	Fuel tanks	0	0.35	3	2	X				X					X	X		X	
C-FUEL-TRCH	Fuel line trench	0	0.35	3	2										X				
Grade Linework																			
C-GRAD-ALOW	Allowable over depth	0	0.35	6	5					X								X	
C-GRAD-BNCH	Bench cut	0	0.35	6	5											X		X	
C-GRAD-DSGN	Design grade (proposed)	0	0.35	3	2	X		X	X	X	X					X		X	
C-GRAD-EXCV	Excavation grade	0	0.50	4	7											X		X	
C-GRAD-EXST	Existing grade, ground line	3	0.35	6	5	X		X	X	X	X					X		X	
C-GRAD-FNSH	Finished grade	0	0.50	4	7	X				X	X					X		X	
C-GRAD-FNSH-PRP1	Proposed Surface #1	0	0.35	8	9	X				X	X					X		X	
C-GRAD-FNSH-PRP2	Proposed Surface #2	0	0.35	8	9	X				X	X					X		X	
C-GRAD-FNSH-PRP3	Proposed Surface #3	0	0.35	8	9	X				X	X					X		X	
C-GRAD-FNSH-PRP4	Proposed Surface #4	0	0.35	8	9	X				X	X					X		X	
C-GRAD-GTXL	Geotextile placement grade	0	0.25	1	3	X				X	X					X		X	
C-GRAD-IDEN	Grade annotation for cross sections and profiles	0	0.35	2	4	X				X	X					X		X	
C-GRAD-REQD	Required depth	0	0.35	6	5					X								X	
C-GRAD-SCLN	Stability control line	7	0.50	5	1	X				X	X					X		X	
C-GRAD-WATR	Water surface in section view	0	0.35	2	4	X				X	X					X		X	
Grid Lines																			
C-GRID-FRAM	Frame	0	0.50	4	7											X		X	
C-GRID-MAJR	Major grid lines	1	0.35	8	9											X		X	
C-GRID-MINR	Minor grid lines	1	0.18	8	9											X		X	
C-GRID-TEXT	Border text, annotation	1	0.35	2	4											X		X	
Heliports																			
C-HELI-BLST	Blast pad and stopway markings	0	0.35	1	3									X		X		X	
C-HELI-CNTR	Centerline markings	0	0.35	1	3									X					
C-HELI-DISP	Displaced threshold markings	0	0.35	1	3									X					
C-HELI-DIST	Fixed distance markings	0	0.35	1	3									X					
C-HELI-IDEN	Heliport numbers and letters	0	0.35	2	4									X		X		X	
C-HELI-SHLD	Shoulder markings	0	0.35	6	5									X					
C-HELI-SIDE	Side stripes	0	0.50	4	7									X					
C-HELI-TDZM	Touchdown zone markers	0	0.35	6	5									X					
C-HELI-THRS	Threshold markers	0	0.35	6	5									X					
Industrial Waste Water																			
C-INDW-ABND-PIPE	Abandoned piping	2	0.35	6	5	X				X	X				X	X		X	

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C-INDW-DEVC	Grit chambers, meters, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves	0	0.35	6	5										X				
C-INDW-FLOW	Flow direction arrows	0	0.35	6	5										X				
C-INDW-FTTG	Caps and cleanouts	0	0.35	6	5										X				
C-INDW-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X	X				X	X		X	
C-INDW-JBOX	Junction boxes and manholes	0	0.35	1	3										X				
C-INDW-LAGN	Lagoons	0	0.35	6	5										X				
C-INDW-LAGN-IDEN	Identifier tags, symbol modifier, and text	0	0.35	6	5										X				
C-INDW-MAIN-PIPE	Main industrial waste water piping	IWASTE	0.35	6	5	X				X					X	X		X	
C-INDW-PLNT	Treatment plants	0	0.35	6	5										X				
C-INDW-SERV-PIPE	Industrial waste water service piping	0	0.35	1	3										X				
C-INDW-SIGN	Surface markers/signs	0	0.35	1	3										X				
C-INDW-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4										X				
C-INDW-STNS-LIFT	Lift stations	0	0.35	6	5										X				
Irrigation																			
C-IRRG-EQPM	Irrigation equipment (e.g., controllers, valves, etc.)	0	0.35	6	5	X		X							X				
C-IRRG-IDEN	Irrigation annotation	0	0.35	2	4	X		X							X	X	X	X	X
C-IRRG-PIPE	Irrigation piping	0	0.35	6	5	X		X							X	X	X	X	X
C-IRRG-WELL	Irrigation wells	0	0.25	3	2										X				
Joints																			
C-JNTS-CNSL	Construction joints - longitudinal	0	0.35	6	5								X						
C-JNTS-CNST	Construction joints - transverse	0	0.35	6	5								X						
C-JNTS-CNTL	Contraction joints - longitudinal	0	0.35	2	4								X						
C-JNTS-CNTT	Contraction joints - transverse	0	0.35	2	4								X						
C-JNTS-EDGE	Thickened edges	0	0.35	4	7								X						
C-JNTS-EXPJ	Expansion joints	0	0.35	12	27								X						
C-JNTS-IDEN	Joint annotation	0	0.35	2	4								X						
Levees																			
C-LEVE-BANK-IDEN	Levee top of bank annotation	0	0.25	20	6	X				X	X								
C-LEVE-TOPB	Levee top of bank	0	0.35	2	4	X				X	X					X		X	
C-LEVE-BERM	Levee berm outline	0	0.35	6	5	X				X	X					X		X	
C-LEVE-BNCH	Levee bench design feature lines (breaklines form DTMs)	0	0.35	20	6	X				X	X					X		X	
C-LEVE-BNCH-IDEN	Levee bench annotation	0	0.25	2	4	X				X	X							X	
C-LEVE-BRRW	Borrow limits	0	0.50	4	7	X				X	X							X	
C-LEVE-CNTR	Levee centerline	7	0.18	20	6	X				X	X					X		X	
C-LEVE-CNTR-IDEN	Levee centerline annotation	0	0.35	20	6	X				X	X							X	
C-LEVE-IDEN	Levee annotation	0	0.35	2	4	X				X	X							X	
C-LEVE-OTLN	Levee outline	0	0.50	4	7	X				X	X							X	
C-LEVE-SLOP	Levee slope indicator with annotation	0	0.35	2	4	X				X	X							X	
C-LEVE-STAN	Levee stationing	0	0.35	2	4	X				X	X							X	
C-LEVE-TOE~	Levee toe	2	0.35	20	6	X				X	X					X		X	
C-LEVE-TOE~-IDEN	Levee toe annotation	0	0.25	20	6	X				X	X							X	
Military Ranges																			
C-MILR-BATP	Battle positions	0	0.50	4	7	X													
C-MILR-CAMS	Range cameras	0	0.35	6	5	X													
C-MILR-FOXH	Fox holes and pits	0	0.35	6	5	X													
C-MILR-MATS	Moving army targets	0	0.50	4	7	X													
C-MILR-MITS	Moving infantry targets	0	0.50	4	7	X													
C-MILR-MITS-IDEN	Moving infantry targets annotation	0	0.35	2	4	X													
C-MILR-PUTS	Pop up targets	0	0.50	4	7	X													
C-MILR-PUTS-IDEN	Pop up targets annotation	0	0.35	2	4	X													
C-MILR-SATS	Stationary army targets	0	0.50	4	7	X													
C-MILR-SATS-IDEN	Stationary army targets annotation	0	0.35	2	4	X													
C-MILR-SITS	Stationary infantry targets	0	0.50	4	7	X													

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C-MILR-SITS-IDEN	Stationary infantry targets annotation	0	0.35	2	4	X													
Natural Gas																			
C-NGAS-ABND-PIPE	Abandoned piping	2	0.35	6	5	X				X					X	X		X	
C-NGAS-DEVC	Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, drip pots, taps, and	0	0.35	6	5										X				
C-NGAS-DEVC-IDEN	Identifier tags, symbol modifier, and text	0	0.35	6	5										X				
C-NGAS-FLOW	Flow direction arrows	0	0.35	6	5										X				
C-NGAS-FTTG	Caps, crosses, and tees	0	0.35	6	5										X				
C-NGAS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X					X	X		X	
C-NGAS-MAIN-PIPE	Main natural gas piping	NTGASN	0.35	6	5	X				X					X	X		X	
C-NGAS-METR	Meters	0	0.35	3	2										X				
C-NGAS-PITS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	1	3										X				
C-NGAS-PITS-VENT	Vent pits	0	0.35	3	2										X				
C-NGAS-PITS-VALV	Valve pits/boxes	0	0.35	3	2	X				X					X	X		X	
C-NGAS-SERV-PIPE	Service piping	0	0.35	1	3										X				
C-NGAS-SIGN	Surface markers/signs	0	0.35	1	3										X				
C-NGAS-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4										X				
C-NGAS-STNS-PUMP	Compressor stations	0	0.35	6	5										X				
C-NGAS-STNS-REDC	Reducing stations	0	0.35	6	5										X				
C-NGAS-TANK	Tanks	0	0.25	3	2	X									X				
Obstructions																			
C-OBST-AIRS	Airspace obstructions	0	0.35	3	2									X					
C-OBST-AIRS-IDEN	Obstruction annotation	0	0.35	2	4									X					
Overrun Areas																			
C-OVRN-CNTR	Centerlines	7	0.25	1	3									X					
C-OVRN-CNTR-IDEN	Centerline annotation	0	0.35	2	4									X					
C-OVRN-IDEN	Airfield overrun area - annotation	0	0.35	2	4									X		X		X	
C-OVRN-OTLN	Airfield overrun area - outlines	0	0.35	4	7									X		X		X	
C-OVRN-SHLD-MRKG	Shoulder markings	0	0.35	4	7									X					
Pads (Arm/Disarm/Calibration, etc.)																			
C-PADS-CNTR	Centerlines	7	0.25	1	3									X					
C-PADS-CNTR-IDEN	Centerline annotation	0	0.35	2	4									X					
C-PADS-IDEN	Pads - annotation	0	0.35	2	4									X		X		X	
C-PADS-OTLN	Pad - outlines	0	0.35	4	7									X		X		X	
C-PADS-SHLD	Shoulders with annotation	0	0.25	2	4									X					
Parking Lots																			
C-PRKG-CARS	Graphic illustration of cars	0	0.35	2	4	X					X	X							
C-PRKG-CNTR	Parking lot centerlines	7	0.25	1	3	X					X	X							
C-PRKG-CNTR-IDEN	Parking lot centerline annotation	0	0.25	1	3	X					X	X							
C-PRKG-CURB	Curbs and gutters	0	0.35	3	2	X					X	X							
C-PRKG-DRAN	Drainage slope indications	0	0.35	1	3	X					X	X							
C-PRKG-FIXT	Parking lot fixtures (e.g., wheel stops, parking meters)	0	0.35	91	106	X					X	X							
C-PRKG-FLNE	Fire lanes	0	0.25	1	3	X					X	X							
C-PRKG-IDEN	Parking lot annotation	0	0.35	6	5	X					X	X				X		X	
C-PRKG-MRKG	Pavement markings	0	0.35	2	4	X					X	X							
C-PRKG-OTLN	Parking lot outlines	0	0.50	4	7	X					X	X				X		X	
C-PRKG-SIGN	Signs	0	0.35	2	4	X					X	X							
Property																			
C-PROP-CONS	Construction limits/controls, staging area	CONLMT	0.70	7	0	X				X	X							X	
C-PROP-ESMT	Easements	CONEMT	0.70	7	0	X				X	X							X	
C-PROP-IDEN	Property annotation	0	0.35	6	5	X				X	X							X	
C-PROP-RWAY	Right of ways	6	0.70	7	0	X				X	X							X	
C-PROP-RWAY-ACQU	Right of way to be acquired in perpetuity	0	0.70	7	0	X				X	X							X	
C-PROP-SECT	Section lines	7	0.50	6	5	X				X	X							X	

Discipline: Civil

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
C-PROP-SECT-IDEN	Section lines annotation	0	0.35	6	5	X				X	X							X	
C-PROP-TSHP	Township/range lines	4	0.50	6	5	X				X	X								
C-PROP-TSHP-IDEN	Township/range lines annotation	0	0.35	6	5	X				X	X								
Pavements																			
C-PVMT-ASPH	Pavement pattern - asphalt	0	0.18	8	9	X				X	X	X		X					
C-PVMT-CONC	Pavement pattern - concrete	0	0.18	8	9	X				X	X	X		X					
C-PVMT-GRVL	Pavement pattern - gravel	0	0.18	8	9	X				X	X	X		X					
C-PVMT-IDEN	Road, parking lot, railroad, airfield pavement annotation	0	0.25	2	4	X				X	X			X		X		X	
C-PVMT-MRKG	Pavement markings	0	0.35	2	4	X				X	X	X							
C-PVMT-PATT	Joint patterns, text and dimensions	0	0.18	8	9	X				X	X		X						
Railroads																			
C-RAIL-CNTR	Railroad track centerlines	7	0.25	1	3							X							
C-RAIL-CNTR-IDEN	Railroad track centerline annotation	0	0.35	1	3							X							
C-RAIL-EQPM	Railroad equipment (e.g., gates, signals)	0	0.35	91	106							X							
C-RAIL-IDEN	Railroad - annotation	0	0.35	6	5							X				X		X	
C-RAIL-TRAK	Railroad tracks	RAILRD	0.35	2	4							X				X		X	
Rivers																			
C-RIVR-TOPB	Top of river bank	0	0.35	5	1	X				X	X					X	X	X	
C-RIVR-BOTM	River bottom	0	0.35	5	1	X				X	X					X	X	X	
C-RIVR-CNTR	Centerline of river	7	0.25	1	3	X				X	X					X	X	X	
C-RIVR-EDGE	River edge	0	0.50	5	1	X				X	X					X	X	X	
C-RIVR-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4	X				X	X					X	X	X	
Roads, Streets, and Highways																			
C-ROAD-ASPH	Road outlines - asphalt surface	0	0.25	8	9	X					X	X				X		X	
C-ROAD-CNTR	Road centerlines	7	0.25	1	3	X					X	X						X	
C-ROAD-CNTR-IDEN	Road centerline annotation	0	0.25	1	3	X					X	X				X		X	
C-ROAD-CONC	Road outlines - concrete surface	0	0.25	7	0	X					X	X				X		X	
C-ROAD-CURB	Curbs and gutters	0	0.35	6	5	X					X	X				X		X	
C-ROAD-GRAL	Guard rails	GUARD	0.35	6	5	X					X	X				X		X	
C-ROAD-GRVL	Road outlines - gravel surface	0	0.25	20	6	X					X	X				X		X	
C-ROAD-IDEN	Road, street, highway annotation	0	0.35	6	5	X					X	X				X		X	
C-ROAD-MRKG	Pavement markings	0	0.35	2	4	X					X	X							
C-ROAD-PATT	Joint patterns, text and dimensions	0	0.18	8	9	X					X	X							
C-ROAD-SHLD	Roadway shoulder	0	0.35	6	5	X					X	X							
C-ROAD-SIGN	Signs	0	0.25	1	3	X					X	X							X
C-ROAD-UPVD	Road outlines - unpaved surface	0	0.25	3	2	X					X	X				X		X	
Riprap and Other Permanent Erosion Control Items																			
C-RRAP-GABN	Gabions	V	0.25	1	3	X			X	X	X								
C-RRAP-MATS	Articulated concrete mats	V	0.25	3	2	X			X	X	X								
C-RRAP-RVMT	Revetments	V	0.25	1	3	X			X	X	X								
C-RRAP-WEIR	Weirs	V	0.25	3	2	X			X	X	X								
Runways																			
C-RUNW-BLST	Blast pad and stopway markings	0	0.35	1	3									X		X		X	
C-RUNW-CNTR	Centerlines	7	0.25	1	3									X					
C-RUNW-CNTR-MRKG	Centerline markings	0	0.35	1	3									X					
C-RUNW-DISP	Displaced threshold markings	0	0.35	1	3									X					
C-RUNW-DIST	Fixed distance markings	0	0.35	1	3									X					
C-RUNW-EDGE	Airfield runway edges	0	0.35	6	5									X					
C-RUNW-IDEN	Airfield runway annotation	0	0.35	2	4									X		X		X	
C-RUNW-SHLD	Shoulder markings	0	0.35	6	5									X					
C-RUNW-SIDE	Side stripes	0	0.35	4	7									X					
C-RUNW-TDZM	Touchdown zone markers	0	0.35	6	5									X					
C-RUNW-THRS	Threshold markers	0	0.35	6	5									X					

Discipline: Civil

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
Site Features																			
C-SITE-BLIN	Site breakline	2	0.35	3	2	X					X								
C-SITE-FENC	Fences and handrails	0, FENCE	0.35	6	5	X					X								
C-SITE-FENC-IDEN	Fence, handrail, ramp, and trail annotation	0	0.35	6	5	X					X								
C-SITE-IDEN	Site feature annotation	0	0.35	6	5	X					X					X		X	
C-SITE-STRC	Structures (bridges, sheds, foundation pads, footings, etc.)	0	0.35	22	22	X					X								
C-SITE-STRS	Stairs and ramps	0	0.35	6	5	X					X								
C-SITE-WALK	Walks, trails and bicycle paths	0	0.35	2	4	X					X								
Sanitary Sewer																			
C-SSWR-ABND-PIPE	Abandoned piping	2	0.35	6	5	X				X	X				X	X		X	
C-SSWR-DEVC	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	0	0.35	6	5	X									X	X		X	
C-SSWR-DEVC-IDEN	Identifier tags, symbol modifier, and text	0	0.25	6	5	X									X	X		X	
C-SSWR-FILT	Filtration beds	0	0.35	3	2										X	X		X	
C-SSWR-FILT-IDEN	Identifier tags, symbol modifier, and text	0	0.35	3	2										X	X		X	
C-SSWR-FLOW	Flow direction arrows	0	0.35	6	5										X	X		X	
C-SSWR-FTTG	Caps and cleanouts	0	0.35	6	5	X									X	X		X	
C-SSWR-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X	X				X	X		X	
C-SSWR-JBOX	Junction boxes and manholes	0	0.35	1	3	X									X	X		X	
C-SSWR-JBOX-IDEN	Identifier tags, symbol modifier, and text	0	0.35	1	3										X	X		X	
C-SSWR-LAGN	Lagoons	0	0.35	3	2										X	X		X	
C-SSWR-LEAC	Leach field	0	0.35	3	2										X	X		X	
C-SSWR-MAIN-PIPE	Sanitary sewer piping	SSWAF	0.35	6	5	X				X	X				X	X		X	
C-SSWR-NITF	Nitrification drain fields	0	0.35	3	2										X	X		X	
C-SSWR-PLNT	Treatment plants	0	0.35	6	5										X	X		X	
C-SSWR-SERV-PIPE	Sanitary sewer service piping	0	0.35	1	3										X	X		X	
C-SSWR-SIGN	Surface markers/signs	0	0.35	1	3										X	X		X	
C-SSWR-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4										X	X		X	
C-SSWR-STNS-PUMP	Booster pump stations	0	0.35	6	5										X	X		X	
C-SSWR-TANK	Septic tanks	0	0.35	3	2	X				X	X				X	X		X	
Storm Sewer																			
C-STRM-ABND-PIPE	Abandoned piping	2	0.35	6	5	X			X	X	X				X	X		X	
C-STRM-AFFF	AFFF lagoon/detention pond	0	0.35	3	2										X	X		X	
C-STRM-CHUT	Chutes and concrete erosion control structures	0	0.35	1	3										X	X		X	
C-STRM-CULV	Culverts	CULVRT	0.35	3	2	X			X	X	X				X	X		X	
C-STRM-DEVC	Downspouts, flumes, oil/water separators, and flap gates	0	0.35	6	5	X			X	X	X				X	X		X	
C-STRM-FLOW	Flow direction arrows	0	0.35	6	5										X	X		X	
C-STRM-FMON	Flow monitoring station	0	0.35	6	5										X	X		X	
C-STRM-FTTG	Caps and cleanouts	0	0.35	6	5	X			X	X	X				X	X		X	
C-STRM-HWAL	Headwalls and endwalls	0	0.50	7	0	X			X	X	X				X	X		X	
C-STRM-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X			X	X	X				X	X		X	
C-STRM-INLT	Inlets (curb, surface, and catch basins)	0	0.35	3	2										X	X		X	
C-STRM-LAGN	Lagoons, ponds, watersheds, and basins	0	0.35	3	2										X	X		X	
C-STRM-MAIN-PIPE	Storm sewer piping	STRAF	0.35	6	5	X			X	X	X				X	X		X	
C-STRM-MHOL	Manholes	0	0.35	1	3	X									X	X		X	
C-STRM-ROOF	Roof drain line	0	0.35	3	2										X	X		X	
C-STRM-SERV-PIPE	Storm sewer service piping	0	0.35	1	3										X	X		X	
C-STRM-SIGN	Surface markers/signs	0	0.35	1	3										X	X		X	
C-STRM-STNS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4										X	X		X	
C-STRM-STNS-PUMP	Pump stations	0	0.35	6	5	X					X				X	X		X	
C-STRM-SUBS-PIPE	Subsurface drain piping	0	0.35	3	2										X	X		X	
Survey																			
C-SURV-DATA	Survey data (benchmarks and horizontal control points or monuments)	0	0.35	6	5	X			X	X	X								
C-SURV-IDEN	Survey, baseline, and control line annotation	0	0.35	6	5	X			X	X	X								

Discipline: Civil

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
C-SURV-LINE	Survey, baseline, and control lines	2	0.35	4	7	X			X	X	X								
Taxiways																			
C-TAXI-CNTR	Centerlines	7	0.25	1	3									X					
C-TAXI-CNTR-IDEN	Centerline annotation	0	0.35	2	4									X					
C-TAXI-CNTR-MRKG	Centerline markings	0	0.25	1	3									X					
C-TAXI-EDGE	Edge markings	0	0.35	4	7									X					
C-TAXI-HOLD	Holding lines	0	0.35	2	4									X					
C-TAXI-IDEN	Taxiway - annotation	0	0.35	2	4									X		X		X	
C-TAXI-OTLN	Taxiway - outlines	0	0.35	4	7									X		X		X	
C-TAXI-SHLD	Shoulders with annotation	0	0.35	2	4									X					
Topography																			
C-TOPO-BNDY-EXTR	Surface exterior boundary	0	0.18	3	2	X	X	X		X	X	X		X					
C-TOPO-BNDY-INTR	Surface interior boundary	2	0.18	1	3	X	X	X		X	X	X		X					
C-TOPO-BKLN	Breaklines	4	0.50	7	0	X	X		X	X	X								
C-TOPO-BKLN-COMM	Subsurface utilities communications breakline	COMUGN	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-DOMW	Subsurface utilities water breakline	WATERL	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-ELEC	Subsurface utilities electric breakline	EPUGN	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-FUEL	Subsurface utilities liquid fuel breakline	LIQPET	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-NGAS	Subsurface utilities natural gas breakline	NTGASN	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-SSWR	Subsurface utilities sanitary sewer breakline	SSWAF	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-STRM	Subsurface utilities storm sewer breakline	STRAF	0.50	7	0	X			X	X	X								
C-TOPO-BORE	Boring locations and text	0	0.35	6	5	X	X	X	X	X	X								
C-TOPO-COOR	Coordinate grid text annotation	0	0.35	122	23	X	X			X	X								
C-TOPO-COOR-LALO	Latitude and longitude grid ticks	0	0.25	3	2	X	X			X	X								
C-TOPO-COOR-STAT	State Plane coordinate ticks	0	0.25	3	2	X	X			X	X								
C-TOPO-COOR-UTM-	UTM coordinate ticks	0	0.25	3	2	X	X			X	X								
C-TOPO-DTMO	DTM obscure area boundary	0	0.35	6	5	X	X	X		X	X	X		X					
C-TOPO-DTMP	DTM points	0	0.35	6	5	X	X	X		X	X	X		X					
C-TOPO-DTMT	DTM triangles	0	0.35	22	22	X	X	X		X	X	X		X					
C-TOPO-MAJR	Major contours	0	0.35	2	4	X	X	X	X	X	X								
C-TOPO-MAJR-IDEN	Major contours - annotation	0	0.35	2	4	X	X	X	X	X	X								
C-TOPO-MINR	Minor contours	0	0.25	3	2	X	X	X	X	X	X								
C-TOPO-MINR-IDEN	Minor contours - annotation	0	0.25	3	2	X	X	X	X	X	X								
C-TOPO-SHAP	Inroads generated shapes/lines	0	0.25	1	3	X	X	X	X	X	X	X	X	X	X				
C-TOPO-SHOR	Shorelines, land features, and references	0	0.35	4	7	X			X	X	X								
C-TOPO-SLOP-FILL	Cut/fill slopes	0	0.35	2	4	X	X		X	X	X								
C-TOPO-SLOP-IDEN	Cut/fill slope, top/toe slope annotation	0	0.35	2	4	X	X		X	X	X								
C-TOPO-SLOP-TOPT	Top/toe slopes	0	0.35	6	5	X	X	X	X	X	X								
C-TOPO-SOUN	Soundings and overbanks	0	0.18	V	V	X			X	X	X								
C-TOPO-SPOT	Spot elevations	0	0.35	2	4	X	X	X	X				X						
C-TOPO-SURF-PERI	Surface perimeter	0	0.18	3	2	X	X	X		X	X	X		X					
C-TOPO-SURF-PONT	Surface feature points	0	0.25	7	0	X	X	X		X	X	X		X					
C-TOPO-SURF-VOID	Surface void region	0	0.18	1	3	X	X	X	X	X	X	X		X					
C-TOPO-WATR	Water level reference (LWRP, after-grading LWRP, SWL, etc.)	3	0.50	V	V	X			X	X	X								
Airfield Traffic Areas																			
C-TRAF-IDEN	Airfield traffic area annotation	0	0.35	2	4									X					
C-TRAF-TYPA	Type A traffic area	4	0.50	4	7									X					
C-TRAF-TYPB	Type B traffic area	6	0.50	4	7									X					
C-TRAF-TYPC	Type C traffic area	1	0.50	4	7									X					
Wetlands																			
C-WETL-BOGS	Bogs	0	0.35	6	5			X											
C-WETL-FENS	Fens	0	0.35	2	4			X											
C-WETL-IDEN	Wetland annotation	0	0.35	2	4			X											

Discipline: Civil

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
C-WETL-MRSH	Fresh water marshes	0	0.35	162	33			X											
C-WETL-MRSH-SALT	Tidal saltwater marshes	0	0.35	162	33			X											
C-WETL-MRSH-TIDL	Tidal freshwater marsh	0	0.35	162	33			X											
C-WETL-PCSN	Pocosins	0	0.35	6	5			X											
C-WETL-PHOL	Vernal pools, playas, prairie potholes, wet meadows, and wet prairies	0	0.35	6	5			X											
C-WETL-RPRN	Riparian forested wetlands	0	0.35	162	33			X											
C-WETL-SLGH	Sloughs	0	0.35	162	33			X											
C-WETL-SWMP	Swamps	0	0.35	162	33			X											
Elevations																			
C-ELEV-IDEN	Component identification numbers	0	0.35	2	4	X			X		X						X		
C-ELEV-OTLN	Outlines	0	0.35	6	5	X			X		X						X		
C-ELEV-PATT	Textures and hatch patterns	0	0.18	8	9	X			X		X						X		
C-ELEV-SIGN	Signage	0	0.35	1	3	X			X		X						X		
Sections																			
C-SECT-IDEN	Component identification numbers	0	0.35	2	4													X	
C-SECT-MBND	Material beyond section cut	0	0.18	5	1													X	
C-SECT-MCUT	Cuts through road surfaces, buildings, structures, fence lines, etc.	V	V	V	V													X	
C-SECT-PATT	Textures and hatch patterns	0	0.18	8	9													X	
Details																			
C-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V														X

Note: V = Varies, NA = Not Applicable

Discipline: Landscape

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Landscape Plan	Irrigation Plan	Details
General Information								
L-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X
L-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X
L-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X
L-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
L-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X
L-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
L-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X
L-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X
L-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X
Irrigation System								
L-IRRG-COVR	Irrigation coverage, spray distribution patterns	0	0.18	5	1		X	
L-IRRG-EQPM	Equipment (e.g., controllers, valves, RPBPs, etc.)	0	0.35	6	5		X	
L-IRRG-HEAD	Irrigation heads, bubblers, and drip irrigation emitters	0	0.25	1	3		X	
L-IRRG-IDEN	Annotation	0	0.35	2	4		X	
L-IRRG-PIPE	Piping	LAWNSP	0.35	6	5		X	
L-IRRG-SPKL	Sprinklers	0	0.35	6	5		X	
Plant and Landscape Material								
L-PLNT-BEDS	Planting beds (perennial and annual beds)	0	0.35	6	5	X		
L-PLNT-BUSH	Bushes and shrubs (e.g., evergreen, deciduous, etc.)	0	0.50	83	42	X		
L-PLNT-BUSH-LINE	Bush and shrub line	0	0.50	83	42	X		
L-PLNT-CTNR	Containers or planters	0	0.25	1	3	X		
L-PLNT-GCVR	Groundcover and vines	0	0.35	82	18	X		
L-PLNT-IDEN	Annotation	0	0.35	6	5	X		
L-PLNT-MLCH	Mulches - organic and inorganic	0	0.25	3	2	X		
L-PLNT-PLTS	Planting plants (e.g., ornamental annuals and perennials)	0	0.50	83	42	X		
L-PLNT-SHAD	Shadow areas	0	0.18	5	1	X		
L-PLNT-SPRG	Sprigs	0	0.25	3	2	X		
L-PLNT-TREE	Trees (e.g., evergreen, deciduous, etc.)	0	0.50	83	42	X		
L-PLNT-TREE-LINE	Tree line	TREEL	0.50	83	42	X		
L-PLNT-TURF	Lawn areas (turfing limits)	0	0.50	23	46	X		
Site Improvements								
L-SITE-BRDG	Bridges (pedestrian)	0	0.35	22	22	X		
L-SITE-DECK	Decks	0	0.35	232	107	X		
L-SITE-FENC	Fencing	FENCE	0.35	2	4	X		
L-SITE-FURN	Furnishings	0	0.50	4	7	X		
L-SITE-IDEN	Annotation	0	0.35	6	5	X		
L-SITE-PLAY	Play structures	0	0.35	2	4	X		
L-SITE-POOL	Pools and spas	0	0.35	162	33	X		
L-SITE-ROCK	Boulders and cobble	0	0.25	1	3	X		
L-SITE-RTWL	Retaining walls	0	0.50	4	7	X		
L-SITE-SPRT	Sports fields	0	0.35	2	4	X		
L-SITE-WALK	Walks and steps	0	V	V	V	X		
Detail Information								
L-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V			X

Note: V = Varies, NA = Not Applicable

Discipline: Structural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
						Vertical Const			Bridges			Hydraulic Structures							
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures	3D Alignment	Sections	Details
General Information																			
S-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-PATT	Patterning, poche, shading, and hatching	0	0.18	8	9	X	X	X	X	X	X	X	X	X	X	X		X	X
S-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X	X	X		X	X
S-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Access																			
S-ACCS-ADIT	Adits in galleries and passages	0	0.35	21	30							X	X		X				
S-ACCS-CHAM	Chambers	0	0.35	22	22							X	X		X				
S-ACCS-EVTR	Elevators	0	0.35	132	103		X												
S-ACCS-GLRY	Galleries, cross overs, trenches, etc.	0	0.35	30	86	X						X			X				
S-ACCS-HTCH	Hatches	0	0.25	32	102	X				X				X	X				
S-ACCS-LADD	Ladders and ladder safety devices	0	0.35	162	33	X	X		X	X	X	X	X		X	X			
S-ACCS-MHOL	Manholes	0	0.35	83	42				X	X					X	X			
S-ACCS-MISC	Miscellaneous access	0	0.35	83	42				X	X					X	X			
S-ACCS-STRS	Stairs	0	0.35	133	111	X			X		X	X	X		X				
S-ACCS-STRS-FRMG	Stair framing	0	0.35	135	127		X		X		X	X	X		X				
S-ACCS-TUNL	Tunnels	0	0.35	42	182	X			X			X	X		X				
Alignment																			
S-ALGN-LINE	Alignments	4	0.25	1	3												X		
Armor																			
S-ARMR-CRNR	Corner protection, corner cap casting	0	0.25	143	191							X							
S-ARMR-LINR	Protective liner (used for walls, culverts, etc.)	0	0.25	122	23							X							
S-ARMR-MISC	Miscellaneous armor	0	0.25	143	191							X							
S-ARMR-WALL	Wall armor	0	0.25	143	191							X							
Beams																			
S-BEAM-CNTR	Beam centerlines	7	0.18	214	117		X				X	X	X	X	X				
S-BEAM-PRIM	Continuous beam or primary beam of two-way beam system	0	0.50	211	109		X				X	X	X	X	X				
S-BEAM-RBAR	Beam rebar	0	0.70	5	1		X				X	X	X	X	X				
S-BEAM-SECD	Girders or secondary beams of two-way beam system	0	0.35	212	101		X				X	X	X	X	X				
Bracing																			
S-BRCG-DIA~	Diagonal bracing	0	0.35	161	25		X				X		X	X					
S-BRCG-HORZ	Horizontal bracing	0	0.35	161	25		X				X		X	X					
S-BRCG-VERT	Vertical bracing	0	0.35	144	199		X				X		X	X					
Bridges																			
S-BRDG-ABUT	Abutments	0	0.50	83	42				X										
S-BRDG-ABUT-RBAR	Abutment rebar	0	0.70	5	1				X										
S-BRDG-BEAR	Bridge bearing	0	0.35	152	88				X		X								
S-BRDG-BEAR-CNTR	Bridge bearing centerlines	7	0.18	214	117				X		X								
S-BRDG-BENT	Bent cap	0	0.35	3	2				X										
S-BRDG-BENT-CNTR	Centerline of bents	7	0.18	214	117				X										
S-BRDG-BENT-RBAR	Bent cap rebar	0	0.70	5	1				X										
S-BRDG-CURB	Curbs/sidewalks on structure	0	0.35	2	4						X								

Discipline: Structural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
						Vertical Const			Bridges			Hydraulic Structures							
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures	3D Alignment	Sections	Details
S-BRDG-DIAP	Diaphragms	0	0.35	5	1						X								
S-BRDG-DIAP-RBAR	Diaphragm rebar	0	0.70	5	1						X								
S-BRDG-DRAN	Drains	0	0.25	22	22					X	X								
S-BRDG-FENC	Fencing rails, fabric, supports, and gates	0	0.25	3	2						X								
S-BRDG-FEND	Fenders	0	0.35	75	220						X								
S-BRDG-GIRD	Girders	0	0.35	70	180						X								
S-BRDG-GIRD-CNTR	Girder centerline	7	0.18	214	117						X								
S-BRDG-HEAD	Headers	0	0.35	112	247						X								
S-BRDG-PIER	Piers	0	0.50	83	42				X										
S-BRDG-STRG	Stringers	0	0.35	212	101						X								
Columns																			
S-COLS-CNTR	Column centerlines/working lines	7	0.18	40	166			X	X										
S-COLS-POST	Short columns	0	0.35	87	74			X											
S-COLS-PRIM	Primary columns	0	0.35	3	2			X	X										
S-COLS-RBAR	Column rebar	0	0.70	5	1			X	X										
S-COLS-SECD	Secondary columns	0	0.35	84	34			X	X										
Decking																			
S-DECK-BRDG	Bridge deck	0	0.35	22	22					X									
S-DECK-BRDG-RBAR	Bridge deck rebar	0	0.70	5	1					X									
S-DECK-FLOR	Floor deck	0	0.25	101	186		X												
S-DECK-FLOR-OPNG	Floor deck openings	2	0.25	1	3		X												
S-DECK-ROOF	Roof deck	0	0.25	62	116		X												
S-DECK-ROOF-OPNG	Roof deck openings	0	0.25	1	3		X												
Equipment Pads and Foundations																			
S-PADS-EQPM	Equipment pads	0	0.35	21	30	X						X	X						
Erosion Control																			
S-EROS-BARR	Vapor/capillary water barriers	0	0.25	233	115	X						X	X		X				
S-EROS-GABN	Gabions	0	0.25	241	179							X	X		X				
S-EROS-PVMT	Slope paving	0	0.25	241	179							X	X		X				
S-EROS-RRAP	Riprap, stone protection, jetties, breakwaters	0	0.25	232	107							X	X		X				
Fasteners & Connections																			
S-FSTN-ABLT	Anchor bolts	0	0.25	30	86	X	X		X	X	X	X	X	X	X	X			
S-FSTN-MISC	Fasteners and connections (non-specific)	0	0.25	13	35		X		X	X	X	X	X	X	X				
Foundation																			
S-FNDN-ANCH	Anchor piles, blocks, strands, deadmen, soil/rock anchors	0	0.35	42	182	X			X			X	X		X	X			
S-FNDN-CNTR	Foundation centerlines	7	0.18	44	198	X			X			X	X		X	X			
S-FNDN-DRAN	Foundation drainage features and objects	0	0.25	43	206	X			X			X	X		X	X			
S-FNDN-FTNG	Footings	0	0.35	42	182	X			X			X	X		X	X			
S-FNDN-FTNG-RBAR	Footing rebar	0	0.70	5	1	X			X			X	X		X	X			
S-FNDN-GRBM	Grade beams	0	0.50	52	36	X													
S-FNDN-PCAP	Pile caps	0	0.35	52	36							X	X		X	X			
S-FNDN-PEDS	Foundation pedestals/pads	0	0.35	41	190	X			X			X	X		X				
S-FNDN-PIER	Piers, drilled shafts, caissons	0	0.50	72	196	X							X		X				
S-FNDN-PILE	Piles	0	0.35	40	166	X			X			X	X		X	X			
S-FNDN-RIBS	Ribbed mat foundation	0	0.35	52	36	X						X	X		X				
S-FNDN-TRMT	Foundation treatment (grouting)	0	0.35	51	28	X			X			X	X		X	X			
S-FNDN-TUNL	Service tunnel/duct banks	0	0.35	42	182	X						X	X		X				

Discipline: Structural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
						Vertical Const			Bridges			Hydraulic Structures							
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures	3D Alignment	Sections	Details
Gates																			
S-GATE-ANCH	Gate anchorages	0	0.25	30	86									X	X				
S-GATE-ANCH-DEAD	Dead man anchorage	0	0.25	30	86									X					
S-GATE-ARMS	Arm	0	0.35	161	25									X					
S-GATE-AXIS	Gate axis and centerlines	7	0.18	214	117		X				X	X	X	X	X				
S-GATE-BLKH	Bulkhead	0	0.35	5	1									X					
S-GATE-BLKH-NDLB	Bulkhead needles beam	0	0.35	212	101									X					
S-GATE-BLKH-NDLS	Bulkhead needles	0	0.35	13	35									X					
S-GATE-CONN	Gate connects, links	0	0.35	30	86									X		X			
S-GATE-DIA~	Diagonals, gussets, sleeve nut	0	0.35	13	35									X					
S-GATE-DIA~-CHAN	Diagonal channels	0	0.35	13	35									X					
S-GATE-DIA~-GUST	Diagonal gusset plate	0	0.35	13	35									X					
S-GATE-DIA~-SUPT	Diagonal gusset plate support	0	0.35	13	35									X					
S-GATE-DIAP	Diaphragms	0	0.35	5	1									X					
S-GATE-FEND	Gate fenders	0	0.35	75	220									X					
S-GATE-FLNG	Flange	0	0.35	5	1									X					
S-GATE-FLNG-DNST	Downstream flange	0	0.35	5	1									X					
S-GATE-FLNG-GIRD	Girder flange	0	0.35	30	86									X					
S-GATE-FLNG-UPST	Upstream flange	0	0.35	5	1									X					
S-GATE-GIRD-WEB~	Girder web plates	0	0.35	162	33									X					
S-GATE-GUDG	Gudgeon	0	0.35	6	5									X					
S-GATE-GUDG-HOOD	Gudgeon hood	0	0.35	6	5									X					
S-GATE-GUDG-HUB~	Gudgeon hub	0	0.35	6	5									X					
S-GATE-GUDG-PIN~	Gudgeon pin	0	0.35	6	5									X					
S-GATE-GUDG-STIF	Gudgeon (hood) stiffener	0	0.35	6	5									X					
S-GATE-GUDG-SUPT	Gudgeon (pin) support	0	0.35	6	5									X					
S-GATE-HORZ	Horizontal rolled shapes	0	0.35	211	109									X					
S-GATE-ICST	Intercostals	0	0.35	132	103									X					
S-GATE-JACK	Gate jack	0	0.35	5	1									X					
S-GATE-JACK-HORZ	Gate jack - horizontal	0	0.35	5	1									X					
S-GATE-JACK-VERT	Gate jack - vertical	0	0.35	5	1									X					
S-GATE-LIFT	Lifting mechanism	0	0.35	142	183									X	X	X			
S-GATE-LTCH	Latching device	0	0.35	5	1									X					
S-GATE-LTCH-BOTM	Latching device - bottom	0	0.35	5	1									X					
S-GATE-LTCH-TOP~	Latching device - top	0	0.35	5	1									X					
S-GATE-LUBE	Lubrication system	0	0.25	5	1									X					
S-GATE-MISC	Gates incidental to structure	0	0.25	5	1							X	X		X	X			
S-GATE-MITR-ASSY	Miter guide assembly	0	0.35	152	88									X					
S-GATE-PIN~	Gate pins	0	0.25	30	86									X					
S-GATE-PNTL	Pintle ball, bushing & base	0	0.35	30	86									X					
S-GATE-PNTL-CAST	Pintle casting	0	0.35	62	116									X					
S-GATE-QOIN	Quoin	0	0.35	152	88									X					
S-GATE-QOIN-FLNG	Quoin flange	0	0.35	152	88									X					
S-GATE-QOIN-MITR	Quion, miter	0	0.35	152	88									X					
S-GATE-QOIN-STIF	Quoin stiffener	0	0.35	152	88									X					
S-GATE-QOIN-TRST	Quoin thrust plate	0	0.35	152	88									X					
S-GATE-QOIN-WALL	Quoin, wall	0	0.35	152	88									X					

Discipline: Structural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
						Vertical Const			Bridges			Hydraulic Structures							
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures	3D Alignment	Sections	Details
S-GATE-QOIN-WEB~	Quoin web	0	0.35	152	88									X					
S-GATE-RAIL	Rails and guides	0	0.35	152	88									X	X	X			
S-GATE-SEAL	Gate seal	0	0.35	232	107										X	X			
S-GATE-SEAL-HORZ	Gate seal - horizontal	0	0.35	232	107									X					
S-GATE-SEAL-VERT	Gate seal - vertical	0	0.35	232	107									X					
S-GATE-SHOE	Gate shoe	0	0.35	142	183									X					
S-GATE-SKIN	Skin plates	0	0.25	142	183									X					
S-GATE-STIF	Stiffener	0	0.35	5	1									X					
S-GATE-STIF-LONG	Stiffener - longitudinal	0	0.35	5	1									X					
S-GATE-STIF-TRAN	Stiffener - transverse	0	0.35	5	1									X					
S-GATE-STOP	Stoplogs	0	0.35	42	182									X	X	X			
S-GATE-THBL	Thimble	0	0.25	241	179									X	X	X			
S-GATE-TRST	Thrust plate	0	0.25	122	23									X					
S-GATE-TRUN	Trunion	0	0.35	6	5									X					
S-GATE-VALV	Valves (general shape)	0	0.35	202	21									X					
S-GATE-VERT	Rolled vertical shapes	0	0.35	144	199									X					
S-GATE-WALK	Walkway	0	0.35	132	103									X					
S-GATE-WALK-FRMG	Walkway - framing	0	0.35	132	103									X					
S-GATE-WALK-GRTG	Walkway - grating	0	0.35	132	103									X					
S-GATE-WALK-SUPT	Walkway - support	0	0.35	132	103									X					
S-GATE-WEB~	Web	0	0.35	162	33									X					
Grade Lines																			
S-GRLN-SURF-E	Existing ground	3	0.25	31	110	X			X			X	X		X	X			
S-GRLN-SURF-N	Finished grade	0	0.35	32	102	X			X			X	X		X	X			
S-WATR-SURF	Water surface	0	0.25	161	25	X			X			X	X		X	X			
Grids																			
S-GRID-HORZ	Grid lines (horizontal)	7	0.18	6	5			X		X	X	X	X	X	X				
S-GRID-HORZ-IDEN	Column I.D. tags (horizontal)	0	0.25	6	5			X		X	X	X	X	X					
S-GRID-VERT	Grid lines (vertical)	7	0.18	6	5			X		X	X	X	X	X	X				
S-GRID-VERT-IDEN	Column I.D. tags (vertical)	0	0.25	6	5			X		X	X	X	X	X					
Hydraulic Features																			
S-HYDR-AXIS	Axis of structure	4	0.18	202	21								X						
S-HYDR-BAFL	Baffle blocks, splash pads	0	0.35	122	23							X	X		X				
S-HYDR-BASN	Stilling and settling basins	0	0.35	122	23								X		X				
S-HYDR-CHAN	Channel (Does not include earthen structures)	0	0.35	122	23										X				
S-HYDR-COFF	Cofferdam	0	0.35	42	182							X	X		X	X			
S-HYDR-COND	Diversionary/bypass conduits and culverts	0	0.35	122	23							X	X		X	X			
S-HYDR-DAM~	Dam	0	0.35	122	23								X		X				
S-HYDR-FISH	Fish ladder or passage	0	0.35	122	23								X		X				
S-HYDR-FLUM	Flume	0	0.35	122	23								X		X				
S-HYDR-INTK	Intake, outlet	0	0.35	122	23							X	X		X	X			
S-HYDR-NOVR	Non-overflow structures	0	0.35	122	23								X		X				
S-HYDR-PENS	Penstock outline and features	0	0.35	122	23								X						
S-HYDR-STRC-POWR	Powerhouse	0	0.35	124	39							X	X						
S-HYDR-SWAY	Spillway	0	0.35	122	23								X		X				
S-HYDR-WEIR	Weirs and sluiceways	0	0.35	122	23								X		X				
Joints																			

Discipline: Structural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
						Vertical Const			Bridges			Hydraulic Structures							
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures	3D Alignment	Sections	Details
S-JNTS-CNTJ	Construction/lift joints - *(Do not use when 3D modeling)*	0	0.25	122	23	X	X			X	X	X	X		X				
S-JNTS-CTLJ	Control/contraction joints (saw cut) -*(Do not use when 3D modeling)*	0	0.25	122	23	X	X			X		X	X		X				
S-JNTS-EXPJ	Expansion joints, joint materials (e.g., felt) -*(Do not use when 3D modeling)*	0	0.25	124	39	X	X			X	X	X	X		X				
S-JNTS-STUC	Stucco joints - *(Do not use when 3D modeling)*	0	0.25	111	246		X												
S-JNTS-WTRS	Waterstops	0	0.25	221	189	X				X		X	X		X	X			
Joists																			
S-JOIS-BRGX	Bridging	0	0.35	82	18		X												
S-JOIS-GIRD	Joist girders	0	0.50	122	23		X												
S-JOIS-PERI	Perimeter channel or rim joist	0	0.35	142	183		X												
S-JOIS-PRIM	Primary joists	0	0.35	132	103		X												
S-JOIS-SECD	Secondary joists	0	0.35	134	119		X												
S-JOIS-TRIM	Partial length or trimmer floor joist	0	0.35	134	119		X												
Fabrications (metal or other specialty)																			
S-FABR-EMBD	Embedded metals (framing around openings)	0	0.35	183	201	X	X		X	X	X	X	X	X	X	X			
S-FABR-HOIS	Hoist structures	0	0.25	142	183						X	X	X	X	X				
S-FABR-HOOK	Line hooks, lifting hooks, check posts etc.	0	0.25	142	183							X	X		X	X			
S-FABR-MOOR	Mooring bits, chocks, rings	0	0.35	142	183							X	X		X				
S-FABR-PL~~	Plates	0	0.35	142	183	X	X		X	X	X	X	X	X	X	X			
S-FABR-TRSH	Trash racks, intake screens	0	0.35	142	183								X		X	X			
Pipes and Culverts																			
S-PIPE-CULV	Precast/manufactured culverts	0	0.35	200	13										X	X			
Platforms																			
S-PLAT-FRMG	Platform frame/stringers	0	0.35	212	101				X	X	X	X	X	X	X				
S-PLAT-GRTG	Platform grating (add a second minor group to indicate platform # or elev)	0	0.25	121	15		X		X	X		X	X	X	X	X			
S-PLAT-WALK	Platform walkway	0	0.35	33	126				X	X	X	X	X	X	X				
Reinforcement																			
S-REIN-RBAR	Steel reinforcing, welded wire fabric	0	0.70	5	1	X	X	X	X	X	X	X	X		X	X			
S-REIN-TEND-HORZ	Horizontal Tendons	0	0.50	181	185					X	X			X					
S-REIN-TEND-VERT	Vertical Tendons	0	0.50	181	185					X	X			X					
Reference Outlines																			
S-OTLN-BLDG	Building outline	6	0.25	5	1	X	X	X				X	X		X	X			
S-OTLN-FLOR	Floor outline	6	0.25	5	1	X	X	X				X	X						
S-OTLN-OPNG	Openings	6	0.25	5	1	X	X	X				X	X	X	X	X			
S-OTLN-ROOF	Roof	6	0.25	5	1	X	X	X											
S-OTLN-STRC	Misc. structures	6	0.25	5	1	X			X	X	X	X	X	X	X	X			
Safety Features																			
S-SAFE-FENC	Fencing rails, fabric, supports, and gates	0	0.25	3	2					X		X	X		X	X			
S-SAFE-GRAL	Guardrails	0	0.35	62	116					X	X	X	X		X	X			
S-SAFE-HRAL	Handrails, railings	0	0.25	3	2					X	X	X	X	X	X	X			
S-SAFE-PARA	Parapet/jersey barrier	0	0.50	3	2					X	X	X				X			
S-SAFE-PARA-RBAR	Parapet/jersey barrier rebar	0	0.70	5	1					X	X	X			X	X			
S-SAFE-WATR	Waterway safety barriers	0	0.35	3	2					X		X	X		X	X			
Signs																			
S-SIGN-BUOY	Sign buoys	0	0.35	242	187								X						
S-SIGN-EXTN	Extrusions	0	0.35	212	101		X												
S-SIGN-FRMG	Framing and connections	0	0.35	3	2		X												
S-SIGN-GAGE	Staff gages	0	0.35	232	107							X	X						

Discipline: Structural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
						Vertical Const			Bridges			Hydraulic Structures							
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures	3D Alignment	Sections	Details
S-SIGN-PANL	Sign panels	0	0.35	232	107		X				X	X							
S-SIGN-SPRT	Supports	0	0.35	5	1		X												
S-SIGN-TEXT	Signage text	0	0.35	222	181		X												
Slabs																			
S-SLAB-APPR	Approach slab	0	0.35	41	190						X								
S-SLAB-APPR-RBAR	Approach slab rebar	0	0.70	5	1						X								
S-SLAB-EDGE	Edge of slab	0	0.35	41	190	X				X	X	X	X		X	X			
S-SLAB-OPNG	Openings (and depressions)	2	0.25	1	3	X				X	X	X	X		X	X			
S-SLAB-RBAR	Slab rebar	0	0.70	5	1	X				X	X	X	X		X	X			
S-SLAB-SECD	Second pour, slab cap	0	0.35	41	190	X				X	X	X	X		X				
S-SLAB-SILL	Sill	0	0.35	41	190	X				X	X	X	X		X				
Stiffeners																			
S-STIF-LONG	Stiffeners - longitudinal	0	0.35	3	2		X				X			X					
S-STIF-TRAV	Stiffeners - transverse	0	0.35	3	2		X				X			X					
Trusses																			
S-TRUS-PRIM	Primary trusses	0	0.50	4	7		X				X		X						
S-TRUS-SECD	Secondary trusses	0	0.35	6	5		X				X		X						
Walls																			
S-WALL-ABUT	Abutments	0	0.35	83	42				X				X		X				
S-WALL-CELL	Cell	0	0.35	53	44							X							
S-WALL-COFF	Cutoff wall	0	0.35	30	86				X			X	X		X	X			
S-WALL-CURT	Curtain/breast wall	0	0.35	72	196				X				X		X				
S-WALL-FULL	Wall going to the top of the structure	0	0.35	3	2		X					X			X				
S-WALL-GARD	Guard/guide walls	0	0.35	72	196							X	X		X				
S-WALL-LOAD	Load bearing walls	0	0.35	3	2	X	X												
S-WALL-MONO	Wall monoliths	0	0.35	3	2							X	X						
S-WALL-MSE~	Mechanically stabilized earth (MSE) wall	0	0.35	72	196				X										
S-WALL-NONL	Non-load bearing walls	0	0.35	72	196	X	X												
S-WALL-PCST	Pre-cast concrete walls	0	0.35	126	55	X	X												
S-WALL-PRHT	Wall that does not reach to the top of the structure	0	0.35	72	196		X					X			X				
S-WALL-RBAR	Wall rebar	0	0.70	5	1							X	X		X	X			
S-WALL-RTWL	Retaining wall (flood walls, wingwalls, etc.)	0	0.35	72	196				X				X		X	X			
S-WALL-SHEA	Shear walls	0	0.35	101	186	X	X												
S-WALL-STUD	Stud walls	0	0.35	42	182	X	X												
Waterway Specialties																			
S-WWAY-DLPH	Dolphins (associated with but not part of bridges, locks and guidewalls)	0	0.35	122	23				X			X	X		X				
S-WWAY-FEND	Fenders	0	0.35	75	220				X			X	X		X				
S-WWAY-MOOR	Mooring cells	0	0.35	142	183				X			X	X		X				
Sections																			
S-SECT-IDEN	Component identification numbers	0	0.35	2	4													X	
S-SECT-MBND	Material beyond section cut	0	0.18	5	1													X	
S-SECT-MCUT	Material cut by section	V	V	V	V													X	
S-SECT-PATT	Textures and hatch patterns	0	0.18	8	9													X	
Details																			
S-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V														X

* Hidden lines will be drawn using line style 2, weight 0.25

Discipline: Architectural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types							
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Floor Plan	Reflected Ceiling Plan	Roof Plan	Equipment Plan	Area Calculations/Occupancy Plan	Elevations	Sections	Details
General Information													
A-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X
A-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X
A-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X
A-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X
A-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X
A-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X
A-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X
A-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X
A-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X
A-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X
Area Information													
A-AREA-IDEN	Room numbers, tenant identifications, area calculations	0	0.35	2	4					X			
A-AREA-LINE	Architectural area calculation boundary lines	0	0.50	4	7					X			
A-AREA-OCCP	Occupant or employee names	0	0.35	2	4					X			
A-AREA-PATT	Area cross hatching	0	0.18	8	9					X			
Ceiling Information													
A-CLNG-ACCS	Access panels	0	0.35	6	5		X						
A-CLNG-CTLJ	Ceiling control joints	0	0.35	2	4		X						
A-CLNG-GRID	Ceiling grid	0	0.25	1	3		X						
A-CLNG-LITE	Specialty ceiling lights not shown on the Electrical Lighting Plan	0	0.50	4	7		X						
A-CLNG-OPNG	Openings, ceiling/roof penetrations (see also A-FLOR-OVHD in Floor Plan model file)	0	0.18	8	9		X						
A-CLNG-PATT	Ceiling patterns	0	0.18	8	9		X						
A-CLNG-SFFT	Soffits	0	0.25	2	4		X						
A-CLNG-SUSP	Suspended elements, ceiling mounted specialties (e.g., clocks, fans, etc.)	0	0.18	5	1		X						
A-CLNG-TEES	Main tees	0	0.18	5	1		X						
Columns													
A-COLS-ENCL	Column enclosures/fire protection	0	0.50	4	7	X							
Doors													
A-DOOR-FULL	Full height (to ceiling) door: swing and leaf	0	0.25	3	2	X							
A-DOOR-IDEN	Door number and symbol, hardware group, etc.	0	0.25	3	2	X							
A-DOOR-PRHT	Partial height door: swing and leaf	0	0.35	6	5	X							
A-DOOR-SYMB	Miscellaneous door symbols (e.g., overhead, bifold, pocket, etc.)	0	0.25	1	3	X							
Equipment													
A-EQPM-ACCS	Equipment access	0	0.35	6	5				X				
A-EQPM-FIXD	Fixed equipment	0	0.50	4	7				X				
A-EQPM-IDEN	Equipment identification numbers	0	0.35	6	5				X				
A-EQPM-MOVE	Moveable equipment	0	0.35	6	5				X				
A-EQPM-OVHD	Overhead, ceiling mounted, or suspended equipment	0	0.35	6	5				X				
Floor Information													
A-FLOR-CSWK	Casework (manufactured cabinets)	0	0.25	3	2	X							
A-FLOR-EVTR	Elevator cars and equipment	0	0.35	2	4	X							
A-FLOR-FIXT	Plumbing fixtures	0	0.25	201	29	X							
A-FLOR-HRAL	Stair and balcony handrails, guard rails	0	0.25	1	3	X							
A-FLOR-IDEN	Room name, space identification text	0	0.35	3	2	X							
A-FLOR-LEVL	Level changes, shafts, ramps, pits, breaks in construction, and depressions	0	0.35	6	5	X							
A-FLOR-NUMB	Room/space identification number and symbol	0	0.35	3	2	X							

Discipline: Architectural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types							
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Floor Plan	Reflected Ceiling Plan	Roof Plan	Equipment Plan	Area Calculations/Occupancy Plan	Elevations	Sections	Details
A-FLOR-OTLN	Floor outline/perimeter/building footprint	0	0.50	4	7	X							
A-FLOR-OTLN-RPRM	Room perimeter shape (interior walls)	0	0.35	2	4	X							
A-FLOR-OVHD	Overhead items (skylights, overhangs, etc.)	2	0.18	8	9	X							
A-FLOR-PATT	Paving, tile, carpet patterns	0	0.18	8	9	X							
A-FLOR-RAIS	Access (raised) flooring	0	0.25	3	2	X							
A-FLOR-SIGN	Signage	0	0.25	1	3	X							
A-FLOR-SPCL	Architectural specialties (e.g., toilet room accessories, display cases)	0	0.25	3	2	X							
A-FLOR-STRS	Stair risers/treads, escalators, ladders	0	0.25	1	3	X							
A-FLOR-TPTN	Toilet partitions	0	0.25	1	3	X							
A-FLOR-WDWK	Architectural woodwork (field built cabinets and counters)	0	0.25	3	2	X							
Windows													
A-GLAZ-FULL	Full height glazed walls and partitions (see A-WALL-CWMG for curtain walls)	0	0.25	1	3	X							
A-GLAZ-IDEN	Window number and symbol	0	0.35	3	2	X							
A-GLAZ-PRHT	Windows and partial height glazed partitions	0	0.25	1	3	X							
A-GLAZ-SILL	Window sills	0	0.18	5	1	X							
Roof Information													
A-ROOF-CRTS	Crickets flow arrows flow info	0	0.25	1	3			X					
A-ROOF-EXPJ	Expansion joints	0	0.18	5	1			X					
A-ROOF-GUTR	Roof internal gutters	0	0.18	8	9			X					
A-ROOF-HRAL	Stair handrails, nosings, guard rails	0	0.18	5	1			X					
A-ROOF-LEVL	Level changes	0	0.18	5	1			X					
A-ROOF-OTLN	Roof perimeter/edge, roof geometry	0	0.35	6	5			X					
A-ROOF-PATT	Roof surface patterns, hatching	0	0.18	8	9			X					
A-ROOF-RFDR	Roof drains	0	0.25	1	3			X					
A-ROOF-SPCL	Roof specialties, accessories, access hatches, dormers	0	0.25	3	2			X					
A-ROOF-STRS	Stair risers/treads, ladders	0	0.18	5	1			X					
A-ROOF-WALK	Roof walkways	0	0.25	3	2			X					
A-ROOF-WALL	Parapet walls and wall caps	0	0.35	2	4			X					
Walls													
A-WALL-CAVI	Cavity wall lines	0	0.18	8	9	X							
A-WALL-CNTR	Wall centerlines	7	0.18	5	1	X							
A-WALL-CWMG	Curtain wall mullions and glass	0	0.25	1	3	X							
A-WALL-FIRE	Fire wall designators (patterning)	0	0.35	2	4	X							
A-WALL-FULL-EXTR	Exterior full height walls	0	0.35	2	4	X							
A-WALL-FULL-INTR	Interior full height walls	0	0.25	3	2	X							
A-WALL-HEAD	Door and window headers	0	0.25	1	3	X							
A-WALL-IDEN	Wall identification/type text or tags	0	0.35	3	2	X							
A-WALL-JAMB	Door and window jambs	0	0.25	1	3	X							
A-WALL-MESH	Mesh or wire wall	0	0.18	5	1	X							
A-WALL-MOVE	Moveable walls/partitions	0	0.18	5	1	X							
A-WALL-OPEN-LVRS	Louvers	0	0.25	1	3	X							
A-WALL-PATT	Wall insulation, hatching, and fill	INBATT	0.18	8	9	X							
A-WALL-PRHT	Partial height walls (do not appear on Reflected Ceiling Plan)	0	0.25	1	3	X							
A-WALL-SPCL	Wall-hung/attached specialties (e.g., fixtures, grab bars (incl. handicap), telephone booths)	0	0.25	1	3	X							
Elevations													
A-ELEV-IDEN	Component identification numbers	0	0.35	2	4						X		
A-ELEV-OTLN	Outlines	0	0.50	4	7						X		

Discipline: Architectural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types							
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Floor Plan	Reflected Ceiling Plan	Roof Plan	Equipment Plan	Area Calculations/Occupancy Plan	Elevations	Sections	Details
A-ELEV-PATT	Textures and hatch patterns	0	0.18	8	9						X		
Sections													
A-SECT-IDEN	Component identification numbers	0	0.35	2	4							X	
A-SECT-MBND	Material beyond section cut	0	0.18	5	1							X	
A-SECT-MCUT	Material cut by section	V	V	V	V							X	
A-SECT-PATT	Textures and hatch patterns	0	0.18	8	9							X	
Detail Information													
A-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V								X

Note: V = Varies, NA = Not Applicable

Discipline: Interiors

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Furniture Plan	System Furniture Plan	Signage Placement Plan	Floor Patterns	Elevations	Details
General Information											
I-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X
I-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X
I-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X
I-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X
I-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X
I-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X
I-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X
I-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X
I-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X
Carpet/Carpet Tile											
I-CRPT-ROLL-ACNT	Carpet (roll goods) - accent color	0	V	1	3				X		
I-CRPT-ROLL-FILD	Carpet (roll goods) - field color	0	V	60	100				X		
I-CRPT-TILE-ACN1	Carpet tile - accent color	0	V	208	69				X		
I-CRPT-TILE-ACN2	Carpet tile - accent color	0	V	236	139				X		
I-CRPT-TILE-FILD	Carpet tile - field color	0	V	204	37				X		
Equipment											
I-EQPM-ACCS	Equipment access	2	0.18	8	9	X					
I-EQPM-CHLD	Child development (play toys, teaching rugs, play forms)	0	0.35	2	4	X					
I-EQPM-COPY	Copiers, fax machines, office equipment	0	0.35	2	4	X					
I-EQPM-FIXD	Fixed equipment	0	0.18	5	1	X					
I-EQPM-IDEN	Equipment identification numbers	0	0.25	1	3	X					
I-EQPM-MEDI	Medical (exam beds, dental chairs, etc.)	0	0.35	2	4	X					
I-EQPM-MOVE	Moveable equipment	2	0.18	5	1	X					
I-EQPM-OVHD	Overhead, ceiling mounted, and suspended equipment	0	0.25	3	2	X					
I-EQPM-STOR	Storage equipment	0	0.35	2	4	X					
Signage											
I-FLOR-SIGN	Signage	0	0.35	6	5			X			
Flooring Items and Materials											
I-FLRG-MATS	Entrance mat components and frames	0	V	4	7				X		
I-FLRG-STON	Stone flooring	0	V	153	104				X		
I-FLRG-TRAN	All floor thresholds and transition moldings	0	V	5	1				X		
I-FLRG-WOOD	Wood parquet tile or planks	0	V	22	22				X		
Furnishings											
I-FURN-ACCS	Accessories (vestibule matts, partitions, draperies, clocks, trash cans, lecturns, lamps, etc.)	0	0.25	1	3	X					
I-FURN-ADPC	Automated Data Processing Components	0	0.35	2	4	X					
I-FURN-ARTW	Artwork	0	0.35	2	4	X					
I-FURN-FLOR	Flooring (carpet, rugs, etc.)	0	0.35	2	4	X					
I-FURN-FREE	Free-standing furnishings (desks, beds, tables, dressers, credenzas, casegoods)	0	0.35	6	5	X					
I-FURN-GRID	Planning grid/modular outline	0	0.50	4	7	X					
I-FURN-IDEN	Furniture code identification	0	0.25	3	2	X					
I-FURN-PLNT	Plants	0	0.25	3	2	X					
I-FURN-SEAT	Seating (chairs, sofas, etc.)	0	0.35	2	4	X					
I-FURN-STOR	File cabinets, high density storage, shelving, storage cabinets	0	0.35	2	4	X					
Monolithic (Poured or Broadcast) Flooring											
I-MONO-SRFL-ACNT	Seamless resinous flooring - accent color	0	V	203	45				X		
I-MONO-SRFL-FILD	Seamless resinous flooring - field color	0	V	9	14				X		
I-MONO-TERR-ACN1	Terrazzo - accent color	0	V	144	199				X		
I-MONO-TERR-ACN2	Terrazzo - accent color	0	V	67	156				X		

Discipline: Interiors

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Furniture Plan	System Furniture Plan	Signage Placement Plan	Floor Patterns	Elevations	Details
I-MONO-TERR-FILD	Terrazzo - field color	0	V	239	163				X		
Resilient Flooring											
I-SHTP-ACNT	Sheet product (vinyl/rubber/linoleum) - accent color	0	V	190	245				X		
I-SHTP-FILD	Sheet product (vinyl/rubber/linoleum) - field color	0	V	241	179				X		
System Furniture											
I-SYST-FURN	Furniture	0	0.35	2	4		X				
I-SYST-IDEN	Code identification components	0	0.25	1	3		X				
I-SYST-IDPL	Code identification panels	0	0.25	1	3		X				
I-SYST-LITE	Lighting components	0	0.50	4	7		X				
I-SYST-PATT	Patterns	0	0.18	8	9		X				
I-SYST-PNLS	Panels	0	0.35	2	4		X				
I-SYST-POWR	Power, communication components	0	0.50	4	7		X				
I-SYST-STOR	Storage components	0	0.35	2	4		X				
I-SYST-WALL	System furniture partition walls	0	0.35	2	4		X				
I-SYST-WKSF	Work surface components	0	0.35	2	4		X				
Tile											
I-TILE-CERM-ACNT	Ceramic mosaic tile - accent color	0	V	153	104				X		
I-TILE-CERM-FILD	Ceramic mosaic tile - field color	0	V	124	39				X		
I-TILE-LINO-ACNT	Linoleum tile - accent color	0	V	236	139				X		
I-TILE-LINO-FILD	Linoleum tile - field color	0	V	60	100				X		
I-TILE-PORC-ACN1	Porcelain tile - accent color	0	V	78	244				X		
I-TILE-PORC-ACN2	Porcelain tile - accent color	0	V	9	14				X		
I-TILE-PORC-FILD	Porcelain tile - field color	0	V	128	71				X		
I-TILE-QUAR-ACNT	Quarry tile - accent color	0	V	2	4				X		
I-TILE-QUAR-FILD	Quarry tile - field color	0	V	30	86				X		
I-TILE-RUBB-ACNT	Rubber tile - accent color	0	V	209	93				X		
I-TILE-RUBB-FILD	Rubber tile - field color	0	V	20	6				X		
I-TILE-TERR-ACN1	Terrazzo tile - accent color	0	V	144	199				X		
I-TILE-TERR-ACN2	Terrazzo tile - accent color	0	V	67	156				X		
I-TILE-TERR-ACN3	Terrazzo tile - accent color	0	V	221	189				X		
I-TILE-TERR-FILD	Terrazzo tile - field color	0	V	239	163				X		
I-TILE-VNYL-ACN1	Vinyl or Vinyl composition tile - accent color	0	V	203	45				X		
I-TILE-VNYL-ACN2	Vinyl or Vinyl composition tile - accent color	0	V	115	48				X		
I-TILE-VNYL-FILD	Vinyl or Vinyl composition tile - field color	0	V	89	90				X		
Elevations											
I-ELEV-IDEN	Component identification numbers	0	0.25	1	3					X	
I-ELEV-OTLN	Outlines	0	0.50	4	7					X	
I-ELEV-PATT	Textures and hatch patterns	0	0.18	5	1					X	
Detail Information											
I-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V						X

Note: V = Varies, NA = Not Applicable

Patterning used within each material to differentiate colors shall match the color and level of the material.

Discipline: Fire Protection

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Life Safety Plan	Fire Suppression Plan	Fire Alarm/Detection Plan	Details
General Information									
F-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X
F-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X
F-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X
F-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X
F-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X
F-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X
F-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X
F-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X
F-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X
Aqueous Film Forming Foam System									
F-AFFF-EQPM	Equipment	0	0.35	82	18		X		
F-AFFF-PIPE	Piping	0	0.35	82	18		X		
CO2 Sprinkler System									
F-CO2S-EQPM	Equipment	0	0.35	6	5		X		
F-CO2S-PIPE	CO2 piping or CO2 discharge nozzle piping	0	0.35	6	5		X		
Control Panels									
F-CTRL-PANL	Control panels	0	0.50	23	46	X		X	
Floor Information									
F-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X	
F-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X	
Halon System									
F-HALN-EQPM	Equipment	0	0.35	22	22		X		
F-HALN-PIPE	Piping	0	0.35	22	22		X		
Inert Gas									
F-IGAS-EQPM	Equipment	0	0.35	162	33		X		
F-IGAS-PIPE	Piping	0	0.35	162	33		X		
Means of Egress Lighting									
F-LITE-EMER	Emergency fixtures	0	0.50	23	46	X			
F-LITE-EXIT	Exit fixtures	0	0.50	203	45	X			
Egress Requirements									
F-LSFT-EGRE	Egress requirements designator	0	0.35	6	5	X			
F-LSFT-OCCP	Occupant load for egress capacity	0	0.35	6	5	X			
F-LSFT-TRVL	Maximum travel distances	0	0.35	6	5	X			
Fire Protection/Suppression/Alarm/Detection Equipment									
F-PROT-ALRM-INDC	Indicating appliances	0	0.50	83	42			X	
F-PROT-ALRM-MANL	Manual fire alarm pull stations	0	0.50	23	46	X		X	
F-PROT-EXTI	Fire extinguishers	0	0.35	2	4	X			
F-PROT-EXTI-CABN	Fire extinguisher cabinets	0	0.35	2	4	X			
F-PROT-HOSE	Fire hoses	0	0.35	2	4	X			
F-PROT-HOSE-CABN	Fire hose cabinets	0	0.35	2	4	X			
F-PROT-SMOK	Smoke detectors and heat sensors	0	0.50	23	46			X	
Fire Ratings									
F-RATE-DOOR	Door fire ratings	0	0.50	4	7	X			
F-RATE-WALL	Wall fire ratings	0	0.50	4	7	X			
Smoke/Pressurization Control									
F-SMOK-DMPR	Dampers	0	0.35	22	22	X		X	

Discipline: Fire Protection

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Life Safety Plan	Fire Suppression Plan	Fire Alarm/Detection Plan	Details
Sprinkler System									
F-SPKL-CLHD	Sprinkler - ceiling heads	0	0.35	122	23		X		
F-SPKL-OTHD	Sprinkler - other heads	0	0.35	122	23		X		
F-SPKL-PIPE	Sprinkler piping	SPRINK	0.50	4	7		X		
F-SPKL-STAN	Standpipe system	0	0.35	122	23		X		
Water Supply and Distribution									
F-WATR-CONN	Fire department connections	0	0.35	122	23		X		
F-WATR-HYDT	Hydrants	0	0.35	122	23		X		
F-WATR-PIPE	Piping	FIRE	0.50	4	7		X		
F-WATR-PUMP	Fire pumps	0	0.35	122	23		X		
Detail Information									
F-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V				X

Note: V = Varies, NA = Not Applicable

Discipline: Plumbing

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Piping Plan	Riser Diagrams	Details
General Information								
P-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X
P-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X
P-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X
P-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
P-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X
P-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
P-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X
P-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X
P-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X
Domestic Water System								
P-DOMW-CPIP	Cold water piping	CLDWTR	0.50	123	31	X		
P-DOMW-EQPM	Hot and cold water equipment	0	0.70	7	0	X		
P-DOMW-EQPM-ACCS	Equipment access doors	0	0.35	82	18	X		
P-DOMW-FPIP	Domestic filtered water piping	0	0.50	83	42	X		
P-DOMW-HPIP	Hot water piping	HWTR, HWTRR	0.50	113	16	X		
P-DOMW-RISR	Hot and cold water risers	2	0.25	3	2	X		
Floor Information								
P-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X		
P-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X		
Laboratory Gas Piping								
P-LGAS-EQPM	Equipment	0	0.70	24	38	X		
P-LGAS-PIPE	Piping	OXYGEN, NITROG, HELIUM, HYDRGN, ACIDWS,	0.50	23	46	X		
Medical/Dental Gas Piping								
P-MDGS-CAIR	Compressed air	CMPAIR	0.50	83	42	X		
P-MDGS-EQPM	Equipment	0	0.70	24	38	X		
P-MDGS-NITG	Nitrogen piping	NITROG	0.50	23	46	X		
P-MDGS-NOXG	Nitrous oxide piping	NITOXI	0.50	23	46	X		
P-MDGS-OXYG	Pure O2 piping	OXYGEN	0.50	23	46	X		
P-MDGS-SAIR	Scavenge air	0	0.50	23	46	X		
P-MDGS-VACU	Medical vacuum piping	VACAIR	0.50	23	46	X		
Penetrations								
P-PENE-FLOR	Floor penetrations	2	0.25	3	2	X		
P-PENE-ROOF	Roof penetrations	2	0.25	1	3	X		
P-PENE-WALL	Wall penetrations	2	0.25	2	4	X		
Sanitary Sewer								
P-SSWR-CNDS	Condensate piping	0	0.50	83	42	X		
P-SSWR-EQPM	Equipment (e.g., sand/oil/water separators)	0	0.70	204	37	X		
P-SSWR-FLDR	Floor drains, sinks, and cleanouts	0	0.35	6	5	X		
P-SSWR-PIPE	Piping	SSWAF	0.50	203	45	X		
P-SSWR-RISR	Sanitary risers	2	0.50	203	45	X		

Discipline: Plumbing

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Piping Plan	Riser Diagrams	Details
P-SSWR-VENT	Vent piping	VENT	0.50	203	45	X		
Storm Drainage System								
P-STRM-PIPE	Storm drain piping	STRAF	0.50	163	41	X		
P-STRM-RFDR	Roof drains	0, ROOFDN	0.50	163	41	X		
P-STRM-RISR	Storm drain risers	2	0.50	163	41	X		
Diagram Information								
P-DIAG-GRPH	Graphics, gridlines, non-text items	V	V	V	V		X	
Detail Information								
P-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V			X

Note: V = Varies, NA = Not Applicable

Discipline: Mechanical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	HVAC Plan	Specialty Piping and Equipment	Hydraulic Systems	HTCW Utilities Plan	Material Handling	Machine Design	Control Diagrams	Elevations	Sections	Details
General Information															
M-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text, weld symbols	0	V	V	V	X	X	X	X	X	X	X	X	X	X
M-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X
M-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X	X	X
M-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X	X
M-ANNO-NPLT	Non-plotting graphic information (e.g., clearances and working space information)	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X
M-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X	X	X
M-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X
M-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X	X
M-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X	X	X
M-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X
Industrial Waste Piping															
M-ACID-EQPM	Acid, alkaline, and oil waste equipment	0	0.35	80	11		X								
M-ACID-PIPE	Acid, alkaline, and oil waste piping	ACIDWS, IWASTE	0.50	80	11		X								
M-ACID-VENT	Acid, alkaline, and oil waste vent piping	2	0.50	80	11		X								
Anti-Freeze															
M-AFRZ-EQPM	Anti-freeze equipment	0	0.35	82	18		X	X							
M-AFRZ-SPLY-PIPE	Anti-freeze supply piping	0	0.50	82	18		X	X							
M-AFRZ-WAST-PIPE	Anti-freeze waste piping	0	0.50	82	18		X	X							
Brine System															
M-BRIN-EQPM	Brine system equipment	0	0.35	123	31		X								
M-BRIN-RETN-PIPE	Brine system return piping	BRINER	0.50	123	31		X								
M-BRIN-SPLY-PIPE	Brine system supply piping	BRINES	0.50	123	31		X								
Chemical Treatment System															
M-CHEM-EQPM	Chemical treatment system equipment	0	0.35	123	31	X									
M-CHEM-RETN-PIPE	Chemical treatment system return piping	0	0.50	123	31	X									
M-CHEM-SPLY-PIPE	Chemical treatment system supply piping	0	0.50	123	31	X									
Compressed Air															
M-CMPA-EQPM	Equipment	0	0.70	84	34		X								
M-CMPA-PIPE	Piping	CMPAIR	0.50	83	42		X								
Condenser Water System															
M-CNDW-EQPM	Condenser water system equipment	0	0.35	83	42	X									
M-CNDW-RETN-PIPE	Condenser water system return piping	CONDWR	0.50	83	42	X									
M-CNDW-SPLY-PIPE	Condenser water system supply piping	CONDWS	0.50	83	42	X									
Controls															
M-CONT-THER	Thermostats	0	0.25	1	3	X		X							
M-CONT-WIRE	Low voltage wiring	1, 2	0.25	1	3	X									
Chilled Water System															
M-CWTR-CNDS-PIPE	Condensate piping	CDRNAF	0.50	83	42	X									
M-CWTR-EQPM	Chilled water equipment	0	0.35	163	41	X									
M-CWTR-RETN-PIPE	Chilled water return piping	CWR	0.50	163	41	X									
M-CWTR-SPLY-PIPE	Chilled water supply piping	CWS	0.50	163	41	X									
Culvert Valves															
M-CVAL-BASE	Culvert valve machinery base	0	0.35	2	4			X							
M-CVAL-BEAM	Culvert valve beams	0	0.35	2	4			X							
M-CVAL-CYLD	Culvert valve machinery cylinder (outline not for details)	0	0.35	80	11			X							

Discipline: Mechanical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	HVAC Plan	Specialty Piping and Equipment	Hydraulic Systems	HTCW Utilities Plan	Material Handling	Machine Design	Control Diagrams	Elevations	Sections	Details
M-CVAL-SEAL	Culvert valve seals	0	0.35	3	2			X							
M-CVAL-SKIN	Culvert valve skin plate	0	0.35	1	3			X							
M-CVAL-STIF	Stiffener plates, angles, etc.	0	0.35	4	7			X							
M-CVAL-TRUN	Culvert valve trunnion beam	0	0.35	6	5			X							
Dual Temperature System															
M-DUAL-EQPM	Dual temperature system equipment	0	0.35	23	46	X									
M-DUAL-RETN-PIPE	Dual temperature system return piping	DTR	0.50	23	46	X									
M-DUAL-SPLY-PIPE	Dual temperature system supply piping	DTS	0.50	23	46	X									
Dust and Fume Collection Systems															
M-DUST-DUCT	Dust and fume ductwork	0	0.50	203	45	X									
M-DUST-DUCT-CNTR	Dust and fume ductwork centerlines	7	0.18	5	1	X									
M-DUST-EQPM	Dust and fume equipment	0	0.35	203	45	X									
M-DUST-GRIL	Dust and fume grilles	0	0.35	203	45	X									
Exhaust Air System															
M-EXHS-DUCT	Exhaust ductwork	V	0.50	83	42	X		X							
M-EXHS-DUCT-CNTR	Exhaust ductwork centerlines	7	0.18	5	1	X		X							
M-EXHS-EQPM	Exhaust equipment	0	0.35	83	42	X		X							
M-EXHS-GRIL	Grilles	0	0.35	83	42	X		X							
Floor Information															
M-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X							
M-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X							
Fuel Systems															
M-FUEL-DIES-RETN	Diesel fuel return piping	0	0.50	23	46			X							
M-FUEL-DIES-SPLY	Diesel fuel supply piping	0	0.50	23	46			X							
M-FUEL-DIES-VENT	Diesel fuel vent piping	0	0.50	23	46			X							
M-FUEL-EQPM	Equipment	0	0.70	24	38		X	X							
M-FUEL-GGEP-LQPG	Liquid petroleum gas	LIQPET	0.50	23	46		X	X							
M-FUEL-OGEP-RETN	Return oil piping	FUELOR	0.50	23	46		X	X							
M-FUEL-OGEP-SPLY	Supply oil piping	FUELOS	0.50	23	46		X	X							
M-FUEL-OGEP-VENT	Oil piping vent	FUELOV	0.50	23	46		X								
Glycol System															
M-GLYC-EQPM	Glycol system equipment	0	0.35	82	18	X	X								
M-GLYC-RETN-PIPE	Glycol system return piping	GHR	0.50	82	18	X	X								
M-GLYC-SPLY-PIPE	Glycol system supply piping	GHS	0.50	82	18	X	X								
Geothermal Heat Pump System															
M-GTHP-EQPM	Geothermal heat pump system equipment	0	0.35	203	45	X			X						
M-GTHP-RETN-PIPE	Geothermal heat pump system return piping	0	0.50	203	45	X			X						
M-GTHP-SPLY-PIPE	Geothermal heat pump system supply piping	0	0.50	203	45	X			X						
Hydraulic Control Systems (Hydraulic Fluid)															
M-HCSF-CYLD	Hydraulic cylinders	0	0.35	7	0			X							
M-HCSF-CYLD-PSTN	Hydraulic cylinder pistons	0	0.35	5	1			X							
M-HCSF-CYLD-WEAR	Wear rings	0	0.35	3	2			X							
M-HCSF-EQPM	Hydraulic system equipment	0	0.35	200	13		X	X							
M-HCSF-FTTG	Hose and pipe fittings	0	0.35	4	7			X							
M-HCSF-HOSE	Hydraulic hoses	0	0.35	4	7			X							
M-HCSF-MOTR	Hydraulic motors and actuators	0	0.35	7	0			X							

Discipline: Mechanical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	HVAC Plan	Specialty Piping and Equipment	Hydraulic Systems	HTCW Utilities Plan	Material Handling	Machine Design	Control Diagrams	Elevations	Sections	Details
M-HCSF-OTLN	Outlines of machinery, etc. in the vicinity of the hydraulic components	0	0.35	80	11			X							
M-HCSF-PUMP	Hydraulic pumps and pump motors	0	0.35	7	0			X							
M-HCSF-RETN-PIPE	Hydraulic system return piping	0	0.50	120	12		X	X							
M-HCSF-ROOM	Floor, walls, etc. that hydraulic system attaches to	0	0.35	5	1			X							
M-HCSF-SCHM-MISC	Miscellaneous schematic figures (i.e., common location lines)	0	0.35	6	5			X							
M-HCSF-SUPT	Pipe supports, hangers, etc.	0	0.35	20	6			X							
M-HCSF-SPLY-PIPE	Hydraulic system supply piping	0	0.50	200	13		X	X							
M-HCSF-VALV	Hydraulic valves	0	0.35	6	5			X							
M-HCSF-VALV-CONT	Hydraulic directional control valves	0	0.35	6	5			X							
M-HCSF-VALV-FLOW	Flow control valves, check valves, etc.	0	0.35	6	5			X							
M-HCSF-VALV-PRES	Pressure control valves: relief valves, counterbalance valves, etc.	0	0.35	6	5			X							
M-HCSF-VALV-SOFF	Hydraulic shutoff type valves (ball, gate, etc.)	0	0.35	6	5			X							
Hydraulic Control Systems (Water)															
M-HCSW-DEVC	Stilling wells, rigid anchors, anchor guides, rectifiers, reducers, markers, meters, regulators, tanks, and valves	0	0.35	6	5			X							
M-HCSW-DEVC-IDEN	Device identifiers	0	0.25	6	5			X							
M-HCSW-EQPM-ACCS	Equipment access doors	0	0.25	3	2			X							
M-HCSW-PUMP	Pump station equipment	0	0.35	6	5			X							
M-HCSW-PUMP-FLOW	Flow direction arrows	0	0.25	3	2			X							
M-HCSW-PUMP-FTTG	Caps and flanges	0	0.35	6	5			X							
M-HCSW-PUMP-IDEN	Pump identifier tags, symbol modifiers, and text	0	0.25	2	4			X							
M-HCSW-PUMP-PIPE	Pump piping (includes fittings and valves)	0	0.50	163	41			X							
High Temperature/Chilled Water System															
M-HTCW-ABND-PIPE	Abandoned piping	2	0.25	1	3	X			X						
M-HTCW-CWTR-MAIN	Main chilled water piping	0	0.35	163	41	X			X						
M-HTCW-CWTR-PLNT	Chilled water plant	0	0.35	163	41	X			X						
M-HTCW-CWTR-SERV	Chilled water service piping	0	0.25	163	41	X		X	X						
M-HTCW-DEVC	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves	0	0.35	6	5	X			X						
M-HTCW-FLOW	Flow direction arrows	0	0.25	3	2	X			X						
M-HTCW-FTTG	Caps and flanges	0	0.35	6	5	X		X	X						
M-HTCW-HWTR-MAIN	Main high temperature piping	0	0.35	113	16	X			X						
M-HTCW-HWTR-PLNT	High temperature water plant	0	0.35	113	16	X			X						
M-HTCW-HWTR-SERV	High temperature service piping	0	0.25	113	16	X			X						
M-HTCW-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4	X			X						
M-HTCW-JBOX	Junction boxes, manholes, handholes, test boxes	0	0.25	1	3	X			X						
M-HTCW-LWTR-MAIN	Main low temperature piping	0	0.35	1	3	X			X						
M-HTCW-LWTR-SERV	Low temperature service piping	0	0.25	1	3	X		X	X						
M-HTCW-PITS	Valve pits/vaults, steam pits	0	0.25	3	2	X			X						
M-HTCW-PLNT-IDEN	Water plant identifier tags, symbol modifiers, and text	0	0.35	2	4	X			X						
M-HTCW-RETN-PIPE	Return for all HTCW lines	0	0.18	5	1	X			X						
M-HTCW-STEM-MAIN	Main steam piping	0	0.35	113	16	X			X						
M-HTCW-STEM-SERV	Steam service piping	0	0.25	113	16	X		X	X						
M-HTCW-STNS-IDEN	Pump station identifier tags, symbol modifiers, and text	0	0.35	6	5	X			X						
M-HTCW-STNS-PUMP	Pump stations	0	0.35	6	5	X			X						
HVAC System															
M-HVAC-ACCS	Equipment access doors	0, 1, 2	0.25	3	2	X		X							
M-HVAC-CDFF	Ceiling diffusers, registers, and grilles	0	0.35	20	6	X		X							

Discipline: Mechanical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	HVAC Plan	Specialty Piping and Equipment	Hydraulic Systems	HTCW Utilities Plan	Material Handling	Machine Design	Control Diagrams	Elevations	Sections	Details
M-HVAC-DMPR	Fire, smoke, volume dampers	0	0.25	1	3	X		X							
M-HVAC-EQPM	Equipment (non-powered)	0	0.35	2	4	X		X							
M-HVAC-EQPM-EFAN	Equipment with electric fans or motors	0	0.35	2	4	X		X							
M-HVAC-EQPM-EPIP	Equipment with piping and electricity	0	0.35	2	4	X		X							
M-HVAC-EQPM-FLOR	Equipment - floor mounted	0	0.35	2	4	X		X							
M-HVAC-EQPM-SUSP	Equipment - suspended	0	0.35	2	4	X		X							
M-HVAC-FDFF	Floor diffusers, registers, and grilles	0	0.35	162	33	X		X							
M-HVAC-IDEN	Duct sizes and pressure classes	0	0.35	6	5	X		X							
M-HVAC-RDFF	Return air diffusers	0	0.35	23	46	X		X							
M-HVAC-RETN	Return ductwork	V	0.50	23	46	X		X							
M-HVAC-RETN-CNTR	Return ductwork centerlines	7	0.18	5	1	X		X							
M-HVAC-ROOF	Roof mounted HVAC equipment	0	0.35	2	4	X		X							
M-HVAC-SPLY	Supply ductwork	V	0.50	4	7	X		X							
M-HVAC-SPLY-CNTR	Supply ductwork centerlines	7	0.18	5	1	X		X							
M-HVAC-SPLY-HDUC	Supply ductwork - high pressure	V	0.50	4	7	X		X							
M-HVAC-SPLY-LDUC	Supply ductwork - low pressure	V	0.50	4	7	X		X							
M-HVAC-TAGS	Diffuser/register/grille tags and air flow arrows	0	0.35	6	5	X		X							
M-HVAC-WDFF	Wall diffusers, registers, and grilles	0	0.35	2	4	X		X							
Hot Water Heating System															
M-HWTR-EQPM	Hot water heating system equipment	0	0.35	113	16	X		X							
M-HWTR-RETN-PIPE	Hot water heating system return piping	HWR, HTHWR	0.50	113	16	X		X							
M-HWTR-SPLY-PIPE	Hot water heating system supply piping	HWS, HTHWS	0.50	113	16	X		X							
Insulating (Transformer) Oil System															
M-INSL-EQPM	Insulating oil equipment	0	0.35	200	13		X								
M-INSL-RETN-PIPE	Insulating oil return piping	0	0.50	200	13		X								
M-INSL-SPLY-PIPE	Insulating oil supply piping	0	0.50	200	13		X								
Lubrication Oil															
M-LUBE-EQPM	Lubrication oil equipment	0	0.35	200	13		X	X							
M-LUBE-RETN-PIPE	Lubrication oil return piping	0	0.50	200	13		X	X							
M-LUBE-SPLY-PIPE	Lubrication oil supply piping	0	0.50	200	13		X	X							
Machine Design															
M-MACH-AXLE	Shafts and axles	0	0.35	2	4			X			X				
M-MACH-BASE	Machinery bases	0	0.35	2	4			X			X				
M-MACH-BEAR	Bearings and couplings	0	0.35	2	4			X			X				
M-MACH-BELT	Wire rope, chains, and belts	0	0.35	22	22			X			X				
M-MACH-BSHG	Bushings, wear plates, shims, and spacers	0	0.35	2	4			X			X				
M-MACH-CLEV	Clevises	0	0.35	22	22			X			X				
M-MACH-COMP	Miscellaneous machinery parts and components	0	0.35	2	4			X			X				
M-MACH-COVR	Machinery covers, cover plates, and guarding	0	0.35	4	7			X			X				
M-MACH-FSTN	Fastenters, nuts, and bolts	0	0.35	2	4			X			X				
M-MACH-GEAR	Gears	0	0.35	6	5			X			X				
M-MACH-KEYS	Keys and keeper plates	0	0.35	22	22			X			X				
M-MACH-LROT	Large rotating machinery (turbine and pump outlines)	0	0.35	6	5			X			X				
M-MACH-MOTR	Machinery motors	0	0.35	6	5			X			X				
M-MACH-PINS	Pins	0	0.35	22	22			X			X				
M-MACH-PULL	Pulleys, drums, and sheaves	0	0.35	22	22			X			X				

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	HVAC Plan	Specialty Piping and Equipment	Hydraulic Systems	HTCW Utilities Plan	Material Handling	Machine Design	Control Diagrams	Elevations	Sections	Details
M-MACH-RAIL	Rails (e.g., crane rails, rail hoots, splice plates, etc.)	0	0.35	22	22			X			X				
M-MACH-ROLL	Rollers and wheels	0	0.35	22	22			X			X				
M-MACH-ROLL-TRAK	Roller tracks	0	0.35	22	22			X			X				
M-MACH-SEAL	Seals	0	0.35	22	22			X			X				
M-MACH-SHOE	Sliding shoes, skids, etc.	0	0.35	22	22			X			X				
M-MACH-SUPT	Support brackets	0	0.35	2	4			X			X				
M-MACH-SPRG	Springs	0	0.35	22	22			X			X				
Mixed Air System															
M-MAIR-DUCT	Mixed air ductwork	0	0.50	7	0	X									
M-MAIR-DUCT-CNTR	Mixed air ductwork centerlines	7	0.18	5	1	X									
M-MAIR-EQPM	Mixed air equipment	0	0.35	7	0	X									
Material Handling Equipment															
M-MATL-CRAN	Cranes	0	0.35	2	4			X		X					
M-MATL-CRAN-BOOM	Crane boom	0	0.35	2	4			X		X					
M-MATL-HOIS	Hoists	0	0.35	2	4			X		X					
M-MATL-HOOK	Hooks, eyes, and other end attachments	0	0.35	2	4			X		X					
M-MATL-LIFT	Miscellaneous lifting equipment	0	0.35	6	5			X		X					
M-MATL-WIRE	Wire rope, chains, and other hoisting medium	0	0.35	6	5			X		X					
Miter Gates															
M-MITR-BASE	Miter gate machinery base	0	0.35	2	4			X							
M-MITR-CLEV	Clevises	0	0.35	22	22			X							
M-MITR-CRNG	Cardanic ring	0	0.35	3	2			X							
M-MITR-CYLD	Miter gate machinery cylinder (outline not for details)	0	0.35	80	11			X							
M-MITR-TRUN	Miter gate machinery trunnion	0	0.35	1	3			X							
Makeup Air System															
M-MKUP-DUCT	Makeup air ductwork	0	0.50	2	4	X									
M-MKUP-DUCT-CNTR	Makeup air ductwork centerlines	7	0.18	5	1	X									
M-MKUP-EQPM	Makeup air equipment	0	0.35	2	4	X									
M-MKUP-GRIL	Makeup air grilles	0	0.35	2	4	X									
Natural Gas System															
M-NGAS-EQPM	Natural gas equipment	0	0.35	6	5		X	X							
M-NGAS-PIPE	Natural gas piping	NTGASN	0.35	6	5		X	X							
Penetrations															
M-PENE-FLOR	Floor penetrations	2	0.25	3	2	X	X	X							
M-PENE-ROOF	Roof penetrations	2	0.25	1	3	X	X	X							
M-PENE-WALL	Wall penetrations	2	0.25	2	4	X	X	X							
Process Piping															
M-PROC-EQPM	Process equipment	0	0.35	120	12		X								
M-PROC-RETN-PIPE	Process return piping	0	0.50	120	12		X								
M-PROC-SPLY-PIPE	Process supply piping	0	0.50	120	12		X								
Relief Air System															
M-RAIR-DUCT	Relief air ductwork	0	0.50	1	3	X									
M-RAIR-DUCT-CNTR	Relief air ductwork centerlines	7	0.18	5	1	X									
M-RAIR-EQPM	Relief air equipment	0	0.35	1	3	X									
M-RAIR-GRIL	Relief air grilles	0	0.35	1	3	X									
Energy Recovery System															

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	HVAC Plan	Specialty Piping and Equipment	Hydraulic Systems	HTCW Utilities Plan	Material Handling	Machine Design	Control Diagrams	Elevations	Sections	Details
M-RCOV-EQPM	Energy recovery system equipment	0	0.35	203	45	X									
M-RCOV-RETN-PIPE	Energy recovery system return piping	0	0.50	203	45	X									
M-RCOV-SPLY-PIPE	Energy recovery system supply piping	0	0.50	203	45	X									
Refrigeration System															
M-REFG-DISC-PIPE	Refrigeration system discharge	REFRD	0.50	163	41	X									
M-REFG-EQPM	Refrigeration system equipment	0	0.35	163	41	X									
M-REFG-RETN-PIPE	Refrigeration system return piping	REFRS	0.50	163	41	X									
M-REFG-SPLY-PIPE	Refrigeration system supply piping	REFRL	0.50	163	41	X									
Raw Water Piping															
M-RWTR-EQPM	Raw water equipment	0	0.35	123	31		X	X							
M-RWTR-RETN-PIPE	Raw water return piping	0	0.50	123	31		X	X							
M-RWTR-SPLY-PIPE	Raw water supply piping	0	0.50	123	31		X	X							
Steam System															
M-STEM-BLBD-PIPE	Boiler blow down piping	BOILBD	0.50	113	16	X									
M-STEM-CNDS-PIPE	Condensate piping	CDRNAF	0.50	83	42	X									
M-STEM-EQPM	Steam system equipment	0	0.35	113	16	X									
M-STEM-HPIP-PIPE	High pressure steam piping	STEAMH	0.50	113	16	X									
M-STEM-LPIP-PIPE	Low pressure steam piping	STEAML	0.50	1	3	X									
M-STEM-MPIP-PIPE	Medium pressure steam piping	STEAMM	0.50	2	4	X									
Transfer Air System															
M-TAIR-DUCT	Transfer air ductwork	0	0.50	200	13	X									
M-TAIR-DUCT-CNTR	Transfer air ductwork centerlines	7	0.18	5	1	X									
M-TAIR-EQPM	Transfer air equipment	0	0.35	200	13	X									
Diagram Information															
M-DIAG-GRPH	Graphics, gridlines, non-text items	V	V	V	V							X			
Elevations															
M-ELEV-IDEN	Component identification numbers	0	0.35	2	4								X		
M-ELEV-OTLN	Outlines	0	0.35	6	5								X		
M-ELEV-PATT	Textures and hatch patterns	0	0.18	8	9								X		
Sections															
M-SECT-IDEN	Component identification numbers	0	0.35	2	4									X	
M-SECT-MBND	Material beyond section cut	0	0.18	5	1									X	
M-SECT-MCUT	Material cut by section	0	0.50	4	7									X	
M-SECT-PATT	Textures and hatch patterns	0	0.18	8	9									X	
Detail Information															
M-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V										X

Note: V = Varies, NA = Not Applicable

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types								
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Lighting Plan	Power Plan	Special Systems Plan	Grounding System Plan	Electrical Utilities Plan	Exterior Communication Systems Plan	Airfield Lighting Plan	Details	Riser/One-Line Diagrams
General Information														
E-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X	X
E-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X
E-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X	X
E-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X
E-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X	X
E-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X	X
E-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X
E-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X
E-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X	X
E-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X
Airfields														
E-AFLD-BCNS-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	203	45							X		
E-AFLD-BCNS-MISC	Miscellaneous navaids - windcones and beacons	0	0.50	203	45							X		
E-AFLD-BCNS-STRB	Strobe beacons	0	0.50	203	45							X		
E-AFLD-CIRC-CTRL	Control and monitoring circuits	0	0.50	163	41							X		
E-AFLD-CIRC-IDEN	Circuit identifier tags, symbol modifier, and text	0	0.35	2	4							X		
E-AFLD-CIRC-MULT	Multiple circuits	0	0.50	23	46							X		
E-AFLD-CIRC-SERS	Series circuits	0	0.50	203	45							X		
E-AFLD-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	0	0.50	23	46							X		
E-AFLD-DBNK	Ductbanks	EUDUCN	0.50	83	42							X		
E-AFLD-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	0	0.50	23	46							X		
E-AFLD-LITE-APPR	Approach lights	0	0.50	203	45							X		
E-AFLD-LITE-DIST	Distance and arresting gear markers	0	0.50	203	45							X		
E-AFLD-LITE-LANE	Hoverlane, taxilane, and helipad lights	0	0.50	203	45							X		
E-AFLD-LITE-OBST	Obstruction lights	0	0.50	203	45							X		
E-AFLD-LITE-RUNW	Runway lights	0	0.50	203	45							X		
E-AFLD-LITE-SIGN	Taxiway guidance signs	0	0.50	203	45							X		
E-AFLD-LITE-TAXI	Taxiway lights	0	0.50	203	45							X		
E-AFLD-LITE-THRS	Threshold lights	0	0.50	203	45							X		
E-AFLD-VALT	Airfield lighting vaults	0	0.50	203	45							X		
Alarm System														
E-ALRM-EQPM	Alarm system equipment	0	0.50	203	45			X						
E-ALRM-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Bell System														
E-BELL-EQPM	Bell system equipment	0	0.50	203	45			X						
E-BELL-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Cable System														
E-CABL-COAX	Coax cable	2	0.50	83	42			X						
E-CABL-FIBR	Fiber optics cable	FIBOPT	0.50	83	42			X						
E-CABL-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
E-CABL-MULT	Multi-conductor cable	V	0.50	83	42			X						
E-CABL-TRAY	Cable trays and wireways	0, WIREWY	0.50	203	45		X	X						
Cathodic Protection System														
E-CATH-ANOD	Sacrificial anode system	0	0.50	83	42					X				
E-CATH-CURR	Impress current system	0	0.50	83	42					X				

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types								
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Lighting Plan	Power Plan	Special Systems Plan	Grounding System Plan	Electrical Utilities Plan	Exterior Communication Systems Plan	Airfield Lighting Plan	Details	Riser/One-Line Diagrams
E-CATH-IDEN	Identifier tags, symbol modifier, and text	0	0.35	83	42					X				
E-CATH-TEST	Test stations	0	0.50	83	42					X				
Cable TV System														
E-CATV-EQPM	Cable TV system equipment	0, CABLTV	0.50	203	45			X						
E-CATV-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Closed-Circuit Television System														
E-CCTV-EQPM	Closed-circuit television system equipment	0, CCTV	0.50	203	45			X						
E-CCTV-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Clock System														
E-CLOK-EQPM	Clock system equipment	0	0.50	203	45			X						
E-CLOK-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Communications														
E-COMM-EQPM	Other communications distribution equipment	0	0.50	23	46						X			
E-COMM-JBOX	Communication junction boxes, pull boxes, manholes, handholes, pedestals, and splices	0	0.50	23	46						X			
E-COMM-OVHD	Overhead communications/telephone lines	COMARN	0.50	4	7						X			
E-COMM-OVHD-IDEN	Identifier tags, symbol modifier and text	0	0.35	4	7						X			
E-COMM-POLE	Poles	0	0.50	203	45						X			
E-COMM-POLE-GUYS	Guying equipment	0	0.50	203	45						X			
E-COMM-POLE-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	203	45						X			
E-COMM-UGND	Underground communications/telephone lines	COMUGN	0.50	4	7						X			
E-COMM-UGND-IDEN	Identifier tags, symbol modifier and text	0	0.35	4	7						X			
Central Dictation System														
E-DICT-EQPM	Central dictation system equipment	0	0.50	203	45			X						
E-DICT-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Underground Ductbanks (to be used when multiple systems are in one ductbank system)														
E-DBNK-MULT	Ductbank	EUDUCN	0.50	83	42					X	X			
E-DBNK-MULT-IDEN	Identifier tags, symbol modifier and text	0	0.35	83	42					X	X			
Energy Monitoring Control Systems														
E-EMCS-EQPM	Energy monitoring control system equipment	0	0.50	203	45			X						
E-EMCS-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Floor Information														
E-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X						
E-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X						
Ground System														
E-GRND-CIRC	Circuits	0	0.50	4	7				X					
E-GRND-DIAG	Ground system diagram	0	0.50	163	41				X					
E-GRND-EQUI	Equipotential ground system	0	0.50	83	42				X					
E-GRND-REFR	Reference ground system	0	0.50	23	46				X					
Intercom/PA System														
E-INTC-EQPM	Intercom system equipment	0	0.50	203	45			X						
E-INTC-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Lighting														
E-LITE-CIRC	Lighting circuits (including crosslines and homeruns)	0	0.50	83	42	X								
E-LITE-CIRC-NUMB	Lighting circuit numbers (e.g., panel/circuit number, wire/conduit size)	0	0.35	2	4	X								
E-LITE-CLNG	Ceiling mounted (surface/pendant) fixtures	0	0.50	203	45	X								
E-LITE-EMER	Emergency fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)	0	0.50	23	46	X								

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types								
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Lighting Plan	Power Plan	Special Systems Plan	Grounding System Plan	Electrical Utilities Plan	Exterior Communication Systems Plan	Airfield Lighting Plan	Details	Riser/One-Line Diagrams
E-LITE-EXIT	Exit fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)	0	0.50	203	45	X								
E-LITE-EXTR	Exterior lights	0	0.50	203	45					X				
E-LITE-EXTR-IDEN	Exterior light identifier tags, symbol modifiers, and text	0	0.35	203	45					X				
E-LITE-FLOR	Floor mounted fixtures (e.g., stage)	0	0.50	203	45	X								
E-LITE-IDEN	Light fixture identifier tags	0	0.35	2	4	X								
E-LITE-JBOX	Junction boxes	0	0.50	83	42	X								
E-LITE-PANL	Main distribution panels, switchboards, lighting panels	0	0.50	4	7	X								
E-LITE-ROOF	Roof lighting	0	0.50	203	45	X								
E-LITE-SPCL	Special fixtures	0	0.50	203	45	X								
E-LITE-SWCH	Lighting contactors, photoelectric controls, low-voltage lighting controls, etc.	0	0.50	163	41	X								
E-LITE-WALL	Wall mounted fixtures	0	0.50	203	45	X								
Lightning Protection System														
E-LTNG-COND	Lightning protection conductors	0	0.50	203	45				X					
E-LTNG-TERM	Lightning protection terminals	0	0.35	2	4				X					
Nurse Call/Paging System														
E-NURS-EQPM	Nurse call/paging system equipment	0	0.50	203	45			X						
E-NURS-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Power														
E-POWR-BUSW	Busways	0, BUSWAY	0.50	203	45		X							
E-POWR-CIRC	Power circuits (including crosslines and homeruns)	V	0.50	83	42		X							
E-POWR-CIRC-NUMB	Power circuit numbers (e.g., panel/circuit number, wire/conduit size)	0	0.35	2	4		X							
E-POWR-CLNG	Ceiling outlets (receptacles and switches)	0	0.50	83	42		X							
E-POWR-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	0	0.50	23	46					X				
E-POWR-FEED	Feeders	0	0.50	203	45		X							
E-POWR-GENR	Generators and auxiliary equipment	0	0.50	4	7		X							
E-POWR-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	0	0.50	83	42		X	X		X				
E-POWR-MOTR	Motors and utilization equipment	0	0.50	4	7		X							
E-POWR-PANL	Panelboards, switchboards, MCC, unit substations, backing boards, patch panel racks	0	0.50	4	7		X	X						
E-POWR-POLE	Power poles	0	0.50	203	45					X				
E-POWR-POLE-GUYS	Guying equipment	0	0.50	203	45					X				
E-POWR-POLE-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	203	45					X				
E-POWR-SUBS	Other substation equipment	0	0.50	23	46					X				
E-POWR-SWCH	Fuse cutouts, motor starters, contactors, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches	0	0.50	163	41		X			X				
E-POWR-URAC	Underfloor raceways	3	0.50	203	45		X							
E-POWR-WALL	Wall/floor outlets (receptacles and switches)	0	0.50	83	42		X							
E-POWR-XFMR-PADM	Pad mounted transformers	0	0.50	23	46					X				
E-POWR-XFMR-POLM	Pole mounted transformers	0	0.50	23	46					X				
Primary Electrical Cables														
E-PRIM-OVHD	Overhead electrical utility lines	EPARN	0.50	4	7					X				
E-PRIM-OVHD-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	4	7					X				
E-PRIM-UGND	Underground electrical utility lines	EPUGN	0.50	4	7					X				
E-PRIM-UGND-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	4	7					X				
Secondary Electrical Cables														
E-SECD-OVHD	Overhead electrical utility lines	ESARN	0.50	163	41					X				
E-SECD-OVHD-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	163	41					X				

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Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types								
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Lighting Plan	Power Plan	Special Systems Plan	Grounding System Plan	Electrical Utilities Plan	Exterior Communication Systems Plan	Airfield Lighting Plan	Details	Riser/One-Line Diagrams
E-SECD-UGND	Underground electrical utility lines	ESUGN	0.50	163	41					X				
E-SECD-UGND-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	163	41					X				
Security System														
E-SERT-ACCS	Access control system	0	0.50	23	46			X						
E-SERT-CLNG	Ceiling mounted sensors	0	0.50	23	46			X						
E-SERT-FLOR	Floor mounted sensors	0	0.50	23	46			X						
E-SERT-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
E-SERT-UNDR	Buried sensors	0	0.50	23	46			X						
E-SERT-WALL	Wall mounted sensors	0	0.50	23	46			X						
Sound System														
E-SOUN-EQPM	Sound system equipment	0	0.50	203	45			X						
E-SOUN-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Special Systems														
E-SPCL-SYST	Special systems (UMCS, EMCS, CATV, etc.)	0	0.50	203	45					X				
E-SPCL-SYST-IDEN	Special systems (UMCS, EMCS, CATV, etc.) identifier tags, symbol modifier, and text	0	0.35	203	45					X				
E-SPCL-TRAF	Traffic signal system	0	0.50	203	45					X				
E-SPCL-TRAF-IDEN	Traffic signal identifier tags, symbol modifier, and text	0	0.35	203	45					X				
TV Antenna System														
E-TVAN-EQPM	Television antenna system equipment	0	0.50	203	45			X						
E-TVAN-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Other Discipline Information														
E-DISC-INFO	Clearances and working space information (NEC code, etc.)	0	0.25	3	2	X	X	X		X	X	X	X	X
Detail Information														
E-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V								X	
Diagram Information														
E-DIAG-GRPH	Graphics, gridlines, non-text items	V	V	V	V									X
E-DIAG-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4									X

Note: V = Varies, NA = Not Applicable

Discipline: Telecommunications

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Telephone/Data Plan	Riser Diagrams	Details
General Information								
T-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X
T-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X
T-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X
T-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
T-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X
T-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
T-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X
T-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X
T-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X
Cable System								
T-CABL-COAX	Coax cable	2	0.50	83	42	X		
T-CABL-FIBR	Fiber optics cable	FIBOPT	0.50	83	42	X		
T-CABL-IDEN	Cable identifiers	0	0.35	2	4	X		
T-CABL-MULT	Multi-conductor cable	0	0.50	83	42	X		
T-CABL-TRAY	Cable trays and wireways	0	0.50	203	45	X		
Equipment								
T-EQPM-COMB	Distribution equipment for both copper and fiber optics	0	0.50	4	7	X		
T-EQPM-COPP	Distribution equipment for copper	0	0.50	4	7	X		
T-EQPM-FIBR	Distribution equipment for fiber optic	0	0.50	4	7	X		
T-EQPM-OTHR	Other telecommunications equipment	0	0.50	4	7	X		
T-EQPM-RELA	Relays, resistors, capacitors, and inducers	0	0.50	4	7	X		
Floor Information								
T-FLOR-IDEN	Room name, space identification text (copied from Archictural - Floor Plan model file)	0	0.25	3	2	X		
T-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X		
Jacks								
T-JACK-COMB	Combination telephone and data/LAN jacks	0	0.50	203	45	X		
T-JACK-DATA	Data/LAN jacks	0	0.50	203	45	X		
T-JACK-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4	X		
T-JACK-PHON	Telephone jacks	0	0.50	203	45	X		
Junction Boxes								
T-COMM-JBOX	Junction boxes	0	0.50	83	42	X		
Other Discipline Information								
T-DISC-INFO	Information and notes for other disciplines	V	V	V	V	X	X	
Diagram Information								
T-DIAG-GRPH	Graphics, gridlines, non-text items	V	V	V	V		X	
T-DIAG-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4		X	
Detail Information								
T-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V			X

Note: V = Varies, NA = Not Applicable

Appendix B
Sheet File Level/Layer Assignment Tables

This appendix provides the sheet file level/layer assignment tables:

General B3
Hazardous Materials B4
Survey/Mapping B5
Geotechnical B6
Civil B7
Landscape B8
Structural B9
Architectural B10
Interiors B11
Fire Protection B12
Plumbing B13
Mechanical B14
Electrical B15
Telecommunications B16

Discipline: General

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
G-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
G-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
G-ANNO-LEGN	Legends and symbol keys	0	V	V	V
G-ANNO-MATC	Match lines	0	0.70	7	0
G-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
G-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
G-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
G-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
G-ANNO-REDL	Redlines	0	0.25	1	3
G-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
G-ANNO-REVS	Revisions	0	0.50	4	7
G-ANNO-SCHD	Schedules	0	V	V	V
G-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
G-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Hazardous Materials

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
H-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
H-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
H-ANNO-LEGN	Legends and symbol keys	0	V	V	V
H-ANNO-MATC	Match lines	0	0.70	7	0
H-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
H-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
H-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
H-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
H-ANNO-REDL	Redlines	0	0.25	1	3
H-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
H-ANNO-REVS	Revisions	0	0.50	4	7
H-ANNO-SCHD	Schedules	0	V	V	V
H-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
H-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Survey/Mapping

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
V-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
V-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
V-ANNO-LEGN	Legends and symbol keys	0	V	V	V
V-ANNO-MATC	Match lines	0	0.70	7	0
V-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
V-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
V-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
V-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
V-ANNO-REDL	Redlines	0	0.25	1	3
V-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
V-ANNO-REVS	Revisions	0	0.50	4	7
V-ANNO-SCHD	Schedules	0	V	V	V
V-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
V-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Geotechnical

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
B-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
B-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
B-ANNO-LEGN	Legends and symbol keys	0	V	V	V
B-ANNO-MATC	Match lines	0	0.70	7	0
B-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
B-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
B-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
B-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
B-ANNO-REDL	Redlines	0	0.25	1	3
B-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
B-ANNO-REVS	Revisions	0	0.50	4	7
B-ANNO-SCHD	Schedules	0	V	V	V
B-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
B-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Civil

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
C-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
C-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
C-ANNO-LEGN	Legends and symbol keys	0	V	V	V
C-ANNO-MATC	Match lines	0	0.70	7	0
C-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
C-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
C-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
C-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
C-ANNO-REDL	Redlines	0	0.25	1	3
C-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
C-ANNO-REVS	Revisions	0	0.50	4	7
C-ANNO-SCHD	Schedules	0	V	V	V
C-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
C-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Landscape

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
L-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
L-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
L-ANNO-LEGN	Legends and symbol keys	0	V	V	V
L-ANNO-MATC	Match lines	0	0.70	7	0
L-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
L-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
L-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
L-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
L-ANNO-REDL	Redlines	0	0.25	1	3
L-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
L-ANNO-REVS	Revisions	0	0.50	4	7
L-ANNO-SCHD	Schedules	0	V	V	V
L-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
L-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Structural

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
S-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
S-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
S-ANNO-LEGN	Legends and symbol keys	0	V	V	V
S-ANNO-MATC	Match lines	0	0.70	7	0
S-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
S-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
S-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
S-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
S-ANNO-REDL	Redlines	0	0.25	1	3
S-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
S-ANNO-REVS	Revisions	0	0.50	4	7
S-ANNO-SCHD	Schedules	0	V	V	V
S-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
S-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Architectural

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
A-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
A-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
A-ANNO-LEGN	Legends and symbol keys	0	V	V	V
A-ANNO-MATC	Match lines	0	0.70	7	0
A-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
A-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
A-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
A-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
A-ANNO-REDL	Redlines	0	0.25	1	3
A-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
A-ANNO-REVS	Revisions	0	0.50	4	7
A-ANNO-SCHD	Schedules	0	V	V	V
A-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
A-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Interiors

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
I-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
I-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
I-ANNO-LEGN	Legends and symbol keys	0	V	V	V
I-ANNO-MATC	Match lines	0	0.70	7	0
I-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
I-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
I-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
I-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
I-ANNO-REDL	Redlines	0	0.25	1	3
I-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
I-ANNO-REVS	Revisions	0	0.50	4	7
I-ANNO-SCHD	Schedules	0	V	V	V
I-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
I-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Fire Protection

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
F-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
F-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
F-ANNO-LEGN	Legends and symbol keys	0	V	V	V
F-ANNO-MATC	Match lines	0	0.70	7	0
F-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
F-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
F-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
F-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
F-ANNO-REDL	Redlines	0	0.25	1	3
F-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
F-ANNO-REVS	Revisions	0	0.50	4	7
F-ANNO-SCHD	Schedules	0	V	V	V
F-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
F-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Plumbing

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
P-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
P-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
P-ANNO-LEGN	Legends and symbol keys	0	V	V	V
P-ANNO-MATC	Match lines	0	0.70	7	0
P-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
P-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
P-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
P-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
P-ANNO-REDL	Redlines	0	0.25	1	3
P-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
P-ANNO-REVS	Revisions	0	0.50	4	7
P-ANNO-SCHD	Schedules	0	V	V	V
P-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
P-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Mechanical

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
M-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
M-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
M-ANNO-LEGN	Legends and symbol keys	0	V	V	V
M-ANNO-MATC	Match lines	0	0.70	7	0
M-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
M-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
M-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
M-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
M-ANNO-REDL	Redlines	0	0.25	1	3
M-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
M-ANNO-REVS	Revisions	0	0.50	4	7
M-ANNO-SCHD	Schedules	0	V	V	V
M-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
M-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Electrical

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
E-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
E-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
E-ANNO-LEGN	Legends and symbol keys	0	V	V	V
E-ANNO-MATC	Match lines	0	0.70	7	0
E-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
E-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
E-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
E-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
E-ANNO-REDL	Redlines	0	0.25	1	3
E-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
E-ANNO-REVS	Revisions	0	0.50	4	7
E-ANNO-SCHD	Schedules	0	V	V	V
E-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
E-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Telecommunications

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
General Information					
T-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
T-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
T-ANNO-LEGN	Legends and symbol keys	0	V	V	V
T-ANNO-MATC	Match lines	0	0.70	7	0
T-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
T-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
T-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
T-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
T-ANNO-REDL	Redlines	0	0.25	1	3
T-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
T-ANNO-REVS	Revisions	0	0.50	4	7
T-ANNO-SCHD	Schedules	0	V	V	V
T-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
T-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Appendix C
Color Table Comparison

For more information on Screened Colors, see the section "Screening" in Chapter 3 "Graphic Concepts."

Appendix C Color Table Comparison		
AutoCAD Color No.	**MicroStation Color No.**	**Screened Color**
1	3	
2	4	
3	2	
4	7	
5	1	
6	5	
7	0	
8	9	
9	14	
10	10	
11	19	
12	27	
13	35	
14	43	
15	51	
16	59	
17	67	
18	75	
19	83	
20	6	
21	30	
22	22	
23	46	
24	38	
25	62	
26	54	
27	78	
28	70	
29	94	
30	86	
31	110	
32	102	
33	126	
34	118	
35	142	
36	134	
37	158	
38	150	
39	174	
40	166	
41	190	
42	182	
43	206	
44	198	
45	222	
46	214	

Appendix C Color Table Comparison		
AutoCAD Color No.	**MicroStation Color No.**	**Screened Color**
47	238	
48	230	
49	251	
50	20	
51	28	
52	36	
53	44	
54	52	
55	60	
56	68	
57	76	
58	84	
59	92	
60	100	
61	108	
62	116	
63	124	
64	132	
65	140	
66	148	
67	156	
68	164	
69	172	
70	180	
71	188	
72	196	
73	204	
74	212	
75	220	
76	228	
77	236	
78	244	
79	252	
80	11	
81	26	
82	18	
83	42	
84	34	
85	58	
86	50	
87	74	
88	66	
89	90	
90	82	
91	106	
92	98	

Appendix C Color Table Comparison		
AutoCAD Color No.	**MicroStation Color No.**	**Screened Color**
93	122	
94	114	
95	138	
96	130	
97	154	
98	146	
99	170	
100	162	
101	186	
102	178	
103	202	
104	194	
105	218	
106	210	
107	234	
108	226	
109	250	
110	242	
111	246	
112	247	
113	16	
114	32	
115	48	
116	64	
117	80	
118	96	
119	112	
120	12	
121	15	
122	23	
123	31	
124	39	
125	47	
126	55	
127	63	
128	71	
129	79	
130	87	
131	95	
132	103	
133	111	
134	119	
135	127	
136	135	
137	143	
138	151	

Appendix C Color Table Comparison		
AutoCAD Color No.	**MicroStation Color No.**	**Screened Color**
139	159	
140	167	
141	175	
142	183	
143	191	
144	199	
145	207	
146	215	
147	223	
148	231	
149	239	
150	40	
151	72	
152	88	
153	104	
154	136	
155	152	
156	184	
157	216	
158	232	
159	248	
160	17	
161	25	
162	33	
163	41	
164	49	
165	57	
166	65	
167	73	
168	81	
169	89	
170	97	
171	105	
172	113	
173	121	
174	129	
175	137	
176	145	
177	153	
178	161	
179	169	
180	177	
181	185	
182	193	
183	201	
184	209	

Appendix C Color Table Comparison		
AutoCAD Color No.	**MicroStation Color No.**	**Screened Color**
185	217	
186	225	
187	233	
188	241	
189	249	
190	245	
191	128	
192	144	
193	160	
194	176	
195	192	
196	208	
197	224	
198	240	
199	254	
200	13	
201	29	
202	21	
203	45	
204	37	
205	61	
206	53	
207	77	
208	69	
209	93	
210	85	
211	109	
212	101	
213	125	
214	117	
215	141	
216	133	
217	157	
218	149	
219	173	
220	165	
221	189	
222	181	
223	205	
224	197	
225	221	
226	213	
227	237	
228	229	
229	253	
230	91	

Appendix C Color Table Comparison		
AutoCAD Color No.	**MicroStation Color No.**	**Screened Color**
231	99	
232	107	
233	115	
234	123	
235	131	
236	139	
237	147	
238	155	
239	163	
240	171	
241	179	
242	187	
243	195	
244	203	
245	211	
246	219	
247	227	
248	235	
249	243	
250	8	Yes
251	200	Yes
252	168	Yes
253	120	Yes
254	56	Yes
255	24	

Appendix D
A/E/C CAD Standard Symbology

This appendix provides the A/E/C CAD Standard Symbology as follows:

General

Lines

DEMO – Demolition Line (NCS) D1-3
DEMOLN – Demolition Line (AEC)....D1-3

Symbols

BREAK – Break Line Symbol D1-7
CNTLIN – Centerline Symbol D1-7
COLLIN – Column Line/
Grid Indicator.....D1-7
DBLARR – Double Arrow Terminator.D1-7
DTLIND – Detail Indicator.....D1-7
KEYIND – Keynote Indicator.....D1-7
MAGNOR – Magnetic North Arrow D1-7
MATIND – Match Line Indicator D1-7
NORIND – North Indicator.....D1-7
NORNCS – North Indicator (NCS).....D1-8
NORTH1 – North Indicator.....D1-8
NORTH2 – North Indicator.....D1-8
NORTH3 – North Indicator.....D1-8
NOTIND – Note Indicator.....D1-8
REVID1 – Revision Indicator, 1 Char ..D1-8
REVID2 – Revision Indicator, 2 Char ..D1-8
S00001 – Scale 1 : 1.....D1-8
S00005 – Scale 1 : 5.....D1-8
S0000B – Scale 1” = 1”.....D1-9
S00010 – Scale 1 : 10.....D1-9
S0001B – Scale 1” = 1’ D1-9
S0001G – Scale 1” = 1’ D1-9
S00020 – Scale 1 : 20.....D1-9
S0003B – Scale 3” = 1’ D1-9
S0003G – Scale 3” = 1’ D1-9
S00050 – Scale 1 : 50.....D1-9
S0005B – Scale 1” = 5’ D1-9
S0005G – Scale 1” = 5’ D1-10
S0006B – Scale 6” = 1’ D1-10
S0006G – Scale 6” = 1’ D1-10
S00100 – Scale 1 : 100.....D1-10
S0010B – Scale 1” = 10’ D1-10
S0010G – Scale 1” = 10’ D1-10
S0012B – Scale 1/2” = 1’ D1-10
S0012G – Scale 1/2” = 1’ D1-10
S0014B – Scale 1/4” = 1’ D1-10
S0014G – Scale 1/4” = 1’ D1-11
S0015B – Scale 1-1/2” = 1’.....D1-11
S0015G – Scale 1-1/2” = 1’ D1-11
S0016B – Scale 1/16” = 1’ D1-11
S0016G – Scale 1/16” = 1’ D1-11
S0018B – Scale 1/8” = 1’ D1-11
S0018G – Scale 1/8” = 1’ D1-11
S001KB – Scale 1:1000 .....D1-11
S00200 – Scale 1 : 200.....D1-11
S0020B – Scale 1” = 20’ D1-12
S0020G – Scale 1” = 20’ D1-12
S002KB – Scale 1:2000 .....D1-12
S0030B – Scale 1” = 30’ D1-12
S0030G – Scale 1” = 30’ D1-12
S0034B – Scale 3/4” = 1’ D1-12
S0034G – Scale 3/4” = 1’ D1-12
S0038B – Scale 3/8” = 1’ D1-12
S0038G – Scale 3/8” = 1’ D1-12
S0040B – Scale 1” = 40’ D1-13
S0040G – Scale 1” = 40’ D1-13
S00500 – Scale 1 : 500.....D1-13
S0050B – Scale 1” = 50’ D1-13
S0050G – Scale 1” = 50’ D1-13
S005KB – Scale 1:5000 .....D1-13
S0060B – Scale 1” = 60’ D1-13
S0060G – Scale 1” = 60’ D1-13
S0080B – Scale 1” = 80’ D1-13
S0080G – Scale 1” = 80’ D1-14
S01000 – Scale 1 : 1000.....D1-14
S0100B – Scale 1” = 100’ D1-14
S0100G – Scale 1” = 100’ D1-14

S010KB – Scale 1 : 10000 .....D1-14
S0150B – Scale 1” = 15’ D1-14
S0150G – Scale 1” = 15’.....D1-14
S02000 – Scale 1 : 2000.....D1-14
S0200B – Scale 1” = 200’ D1-14
S0200G – Scale 1” = 200’.....D1-15
S0300B – Scale 1” = 300’ D1-15
S0300G – Scale 1” = 300’.....D1-15
S0316B – Scale 3/16” = 1’ D1-15
S0316G – Scale 3/16” = 1’.....D1-15
S0332B – Scale 3/32” = 1’ D1-15
S0332G – Scale 3/32” = 1’.....D1-15
S0364B – Scale 3/64” = 1’ D1-15
S0364G – Scale 3/64” = 1’.....D1-15
S0400B – Scale 1” = 400’ D1-16
S0400G – Scale 1” = 400’.....D1-16
S05000 – Scale 1 : 5000.....D1-16
S0500B – Scale 1” = 500’ D1-16
S0500G – Scale 1” = 500’.....D1-16
S06000 – Scale 1 : 6000.....D1-16
S0600B – Scale 1” = 600’ D1-16
S0600G – Scale 1” = 600’.....D1-16
S0800B – Scale 1” = 800’ D1-16
S0800G – Scale 1” = 800’.....D1-17
S10000 – Scale 1 : 10000.....D1-17
S1000B – Scale 1” = 1000’ D1-17
S1000G – Scale 1” = 1000’.....D1-17
S10K0B – Scale 1” = 10000’ D1-17
S10K0G – Scale 1” = 10000’.....D1-17
S125KB – Scale 1 : 125000 .....D1-17
S20000 – Scale 1 : 20000.....D1-17
S2000B – Scale 1” = 2000’ D1-17
S2000G – Scale 1” = 2000’.....D1-18
S3000B – Scale 1” = 3000’ D1-18
S3000G – Scale 1” = 3000’.....D1-18
S4000B – Scale 1” = 4000’ D1-18
S4000G – Scale 1” = 4000’.....D1-18
S5000B – Scale 1” = 5000’ D1-18
S5000G – Scale 1” = 5000’.....D1-18
S6000B – Scale 1” = 6000’ D1-18
S6000G – Scale 1” = 6000’.....D1-18
S8000B – Scale 1” = 8000’ D1-19
S8000G – Scale 1” = 8000’.....D1-19
SECIN1 – Section Indicator.....D1-19
SECIN2 – Section Indicator.....D1-19
SECIN3 – Section Indicator.....D1-19
TITLE1 – Drawing Block Title.....D1-19
TITLE2 – Drawing Block Title.....D1-19

Hazardous Materials

Lines

HAZMAT – Hazardous Materials.....D2-3

Symbols

AIRQST – Air Quality Monitoring Station D2-7
AIRSMP – Air Sample Location.....D2-7
BIOSMP – Biological Sample LocationD2-7
EGDECN – Equip. Decontamination....D2-7
EGONST – Onsite Command Post D2-7
EGSITE – Site Information Center D2-7
EGWASH – Washdown Water Tank D2-7
EHZMSA – Hazmat Storage Location ..D2-7
EHZMSB – Hazmat Storage Building ..D2-7
EHZMSR – Hazmat Storage Room.....D2-8
EHZMSV – Hazmat Storage Vault D2-8
EHZWSA – Hazwaste Storage LocationD2-8
EHZWSB – Hazwaste Storage BuildingD2-8
EHZWSR – Hazwaste Storage Room ...D2-8
EHZWSV – Hazwaste Storage Vault....D2-8
EMGSHW – Emergency Shower.....D2-8
EPOLLS – Pollution Source Site D2-8
EYEWAS – Emergency Eyewash.....D2-8
GWTQST – Groundwater Quality Monitoring Station.....D2-9
LANGAS – Landfill Gas Monitor ProbeD2-9
MAGLOC – Magnetometer Det. Locat.D2-9
MATSMP – Solid Material Sample Location D2-9
PRLLOC – Potential Release Location.D2-9
RESTR – Restricted Access D2-9
SEDSMP – Sediment Sample Location D2-9
SOLGAS – Soil Gas Monitoring Probe D2-9
SOLSMP – Soil Sample Location.....D2-9
SPLRES – Spill Response D2-10
SPLTNK – Spill Containment Tank....D2-10
SURSMP – Surface Water Sample LocD2-10
SWTQST – Surface Water Quality Monitoring Station.....D2-10
WASSMP – Waste Sample Location ..D2-10
WATSMP – Groundwater Sample LocD2-10

Survey/Mapping

Lines

16THLN – Sixteenth Section Line.....D3-3
BANKLF – Bank Left.....D3-3
BANKRT – Bank Right.....D3-3
BARDIT – Ditch Barrier.....D3-3
BARDTB – Ditch and Berm Barrier.....D3-3
BARGEN – Generic Security Barrier ...D3-3
BARMAS – Security Masonry Barrier .D3-3
CMP12 – CMP 12 in. Diameter Linear Pattern.....D3-3
CMPU12 – CMP up to 12 in. Diameter Linear Pattern.....D3-3
COMARX – Existing Aerial Communication Line D3-4
COMUGX – Existing Underground Communication Line D3-4
CONEMT – Construction Limit.....D3-4
CONLMT – Construction Limit.....D3-4
CULVRT – Culvert Pipe.....D3-4
DITCH – Ditch Line.....D3-4
EPARX – Existing Aerial Primary Electrical Line.....D3-4
EPUGX – Existing Underground Primary Electrical Line.....D3-4
ESARX – Existing Aerial Secondary Electrical Line.....D3-4
ESUGX – Existing Underground Secondary Electrical Line.....D3-5
EUDUCX – Existing Underground Ductbank.....D3-5
FENCE – Fence.....D3-5
FIBOPT – Fiber Optics Line D3-5
FIRE – Fire Protection Water Supply ...D3-5
FUELOR – Fuel Oil Return D3-5
FUELOS – Fuel Oil Supply D3-5
FUELOV – Fuel Oil Tank Vent D3-5
GUARD – Guardrail.....D3-5
INDXDC – Index Depth Contour.....D3-6
IWASTE – Industrial Waste.....D3-6
LEVEBO – Other Existing Levee D3-6
LEVEE – New Levee D3-6
LEVEEX – Existing Levee D3-6
LEVERP – Levee to be Repaired.....D3-6
LIQPET – Liquid Petroleum Gas.....D3-6
MINRDC – Minor Depth Contour D3-6
NONPOT – Nonpotable Water D3-6
NTGASX – Exist. Natural Gas Piping ..D3-7
PROJBL – Project Boundary Line D3-7
PROPL – Property Line D3-7
RAILRD – Railroad D3-7
RTOFWY – Right of Way D3-7
SILT – Silt Fence D3-7
SSILT – Super Silt Fence.....D3-7
SSWAFX – Existing Sanitary Sewer D3-7
STRAFX – Existing Storm Drain.....D3-7
TREEL – Tree Line.....D3-8
WATRX – Existing Water Line.....D3-8

Patterns

CONC – Concrete D3-11
CONCST – Concrete, Stone.....D3-11
EEARTH – Existing Earth. D3-11
EROCK – Existing Rock.....D3-11
FILLSC – Fill Section D3-11
GRAVEL – Gravel.....D3-11
GROUT – Grout.....D3-11
LSWAMP – Large Swamp.....D3-11
POROUS – Porous D3-11
RIPRAP – Riprap D3-12

Symbols

ACLLEL – Elevated Approach Lightbar.....D3-15
ACLLSF – Semiflush Approach Lightbar.....D3-15
AERO – Seaplane Anchorage Buoy....D3-15
AFBCN – Airfield Beacon D3-15
AIRFLD – Airfield Symbol.....D3-15
ANCHR1 – Anchorage Large Vessel..D3-15
ANCHR2 – Anchorage Large Vessel..D3-15
ANCHR3 – Anchorage Small Vessel..D3-15
ANCHR4 – Anchorage Small Vessel..D3-15
ANCHR5 – Anchorage Small Vessel..D3-16
ANCHRB – Anchor Berth.....D3-16
ARROW – Arrow Terminator.....D3-16
BAR1 – Barrel Buoy D3-16
BAR1C – Barrel Buoy, Indicate ColorD3-16
BAR2 – Barrel Buoy D3-16
BARD – Barrel Buoy, Diagonal StripeD3-16
BARLT1 – Barrel Buoy, Lighted.....D3-16
BARLT2 – Barrel Buoy, Lighted.....D3-16
BARMKR – Barrier Marker.....D3-17

BARV – Barrel Buoy, Vertical Stripe.D3-17
BARVT – Barrel Buoy, Vertical Stripe, w/Topmark D3-17
BCN1 – General Beacon D3-17
BCN2 – General Beacon D3-17
BCN3 – General Beacon D3-17
BCN4 – General Beacon D3-17
BCN5 – General Beacon D3-17
BCNBY1 – Buoyant Beacon.....D3-17
BCNBY2 – Buoyant Beacon.....D3-18
BCNLT1 – Lighted Beacon.....D3-18
BCNLT2 – Lighted Beacon.....D3-18
BCNLT3 – Lighted Beacon.....D3-18
BCNRES – Resilient Beacon D3-18
BCNTG1 – Telegraphic Mooring Beacon D3-18
BCNTG2 – Telegraphic Mooring Beacon D3-18
BCNTP1 – Telephonic Mooring Beacon D3-18
BCNTP2 – Telephonic Mooring Beacon D3-18
BCNTR1 – Triangular Beacon.....D3-19
BCNTR2 – Triangular Beacon.....D3-19
BM – Bench Mark.....D3-19
BMALT – Bench Mark Alternate D3-19
BNDMRK – Boundary Mark.....D3-19
BREAK – Break Line Symbol D3-19
BYANCH – Anchorage Buoy.....D3-19
BYBELB – Bell Barrel Buoy.....D3-19
BYBELP – Bell Pillar Buoy.....D3-19
BYCHEC – Checkered Buoy.....D3-20
BYCOMP – Compass Adjustment Buoy.....D3-20
BYEXPL – Explosive Anchorage Buoy.....D3-20
BYFISH – Fish Trap Buoy.....D3-20
BYGONB – Gong Barrel Buoy.....D3-20
BYGONP – Gong Pillar Buoy D3-20
BYJUNC – Junction Buoy D3-20
BYPOS – Position of Buoy.....D3-20
BYQUAR – Quarantine Buoy.....D3-20
BYWAV1 – Wave Actuated Bell Buoy.....D3-21
BYWAV2 – Wave Actuated Bell Buoy.....D3-21
BYWHIB – Whistle Barrel Buoy.....D3-21
BYWHIP – Whistle Pillar Buoy.....D3-21
CABCNZ – Cable Crossing Zone D3-21
CABDIS – Disused Submarine Cable.D3-21
CABLAN – Cable Landing Beacon D3-21
CABLE – Submarine Cable D3-21
CABLE1 – Submarine Cable Area.....D3-21
CABLE2 – Submarine Cable Area.....D3-22
CABPWR – Submarine Power Area ...D3-22
CAIRN1 – Cairn.....D3-22
CAIRN2 – Cairn.....D3-22
CAIRN3 – Cairn.....D3-22
CAIRN4 – Cairn.....D3-22
CAN1 – Can Buoy D3-22
CAN2 – Can Buoy D3-22
CANWT – White Can Buoy w/Topmark.....D3-22
CATBSN – Catch Basin.....D3-23
CATBSR – Round Catch Basin D3-23
CDHDR – Core Drill Hole Drilled.....D3-23
CDHUDR – Core Drill Hole UndrilledD3-23
CGRES1 – Coast Guard Rescue Station.....D3-23
CGRES2 – Coast Guard Rescue Station.....D3-23
CGRES3 – Coast Guard Rescue Station.....D3-23
CKTID – Circuit ID Symbol D3-23
CLNOUT – Cleanout D3-23
CMHLX – Existing Communication Manhole D3-24
CNR90 – Corner Solid 90 .....D3-24
CNRNF – Corner Not Found D3-24
CNRSF – Corner Solid Flat.....D3-24
CNTLIN – Centerline Symbol D3-24
COAST1 – Coast Guard Station.....D3-24
COAST2 – Coast Guard Station.....D3-24
COAST3 – Coast Guard Station.....D3-24
COAST4 – Coast Guard Station.....D3-24
CULVEE – Culvert End Symbol D3-25
DBID – Ductbank ID Symbol D3-25
DBLARR – Double Arrow TerminatorD3-25
DGUYX – Down Guy D3-25
DISPLT – Disused Platform.....D3-25
DNGPB – Lighted Danger Pillar BuoyD3-25
DNGRK – Danger Underwater Rocks Depth Unknown.....D3-25
DNGRK1 – Danger Underwater Rocks Depth Unknown.....D3-25
DNGSB – Lighted Danger Spar Buoy D3-25
DOLPHN – Dolphin.....D3-26
DSTMKR – Runway Distance MarkerD3-26

DSWTCH – Distribution Switch.....D3-26
DTHL – Displace Threshold Light.....D3-26
ECRD – Rock Dam Sediment Trap.....D3-26
EHHLX – Existing Electrical Handhole.....D3-26
EMHLX – Existing Electrical Manhole.....D3-26
EPBXX – Existing Electrical Pullbox.....D3-26
ERSBD – Straw Bale Dam.....D3-26
ERSCTD – Sediment Ctrl Temp Div...D3-27
ERSF – Silt Fence.....D3-27
ERSFRO – Silt Fence Rock Overflow D3-27
ERSOST – Stone Outlet Sed. Trap.....D3-27
ERTGCE – Constr. Entrance Exit.....D3-27
FIXPNT – Fixed Point.....D3-27
FLARRL – Flow Arrow Left in 0 Pt..D3-27
FLARRR – Flow Arrow Right in 0 Pt.D3-27
FLDGAT – Flood Gate.....D3-27
FOG – Fog Signal.....D3-28
FOGBCN – Fog Signal Beacon.....D3-28
FOGBY – Fog Signal Buoy.....D3-28
FOGLS – Fog Signal Light Ship.....D3-28
FOGLSM – Fog Signal Light Ship, Manned.....D3-28
FOMETR – Fuel Oil Meter.....D3-28
FOMHOL – Fuel Oil Manhole.....D3-28
FOVALT – Fuel Oil Vault.....D3-28
GREASE – Grease Trap.....D3-28
GRITCH – Grit Chamber.....D3-29
GSMETR – Gas Meter.....D3-29
GSMHOL – Gas Manhole.....D3-29
GSPLNT – Gas Plant.....D3-29
GSRECR – Gas Receiver.....D3-29
GSTRAP – Gas Trap.....D3-29
GSVALT – Gas Valve Vault.....D3-29
HEADWL – Headwall.....D3-29
HLL – Hoverlane Light.....D3-29
HLLL – Hoverlane Limit Light.....D3-30
HORCPT – Horizontal Control Point..D3-30
HOVCPT – Horiz. Vert. Control PointD3-30
HPIL – Helipad Inset Light.....D3-30
HPPLEL – Elevated Helipad Perimeter Light.....D3-30
HPPLSF – Semiflush Helipad Perimeter Light.....D3-30
HUREYE – Hurricane Eye.....D3-30
HYDRNT – Hydrant.....D3-30
INSHWY – Interstate Hwy. Symbol...D3-30
INSTBY – Oil Gas Installation Buoy..D3-31
IPC – Iron Pin and Cap.....D3-31
IWMETR – Industrial Waste Water Meter.....D3-31
IWMHOL – Industrial Waste ManholeD3-31
JETTY – Jetty.....D3-31
JNBX – Junction Box.....D3-31
KELP – Kelp/Seaweed.....D3-31
LANBY1 – Lanby Superbuoy Navaid D3-31
LANBY2 – Lanby Superbuoy Navaid D3-31
LATBCN – Lattice Beacon.....D3-32
LIFEBT – Lifeboat Station.....D3-32
LIFEM1 – Lifeboat at Mooring.....D3-32
LIFEM2 – Lifeboat at Mooring.....D3-32
LIMIT – Limit of Safety Zone.....D3-32
LITSV1 – Floating Light.....D3-32
LITSV2 – Floating Light.....D3-32
LOOKTR – Lookout Watch Station....D3-32
LTART – Articulated Light.....D3-32
LTBEAC – Lighted Beacon.....D3-33
LTBY – Lighted Buoy.....D3-33
LTBYBB – Lighted Black Barrel Buoy.....D3-33
LTFLD – Floodlight.....D3-33
LTFLT – Float Light.....D3-33
LTFLT1 – Float Light IALA.....D3-33
LTFLT2 – Float Light IALA.....D3-33
LTHOU1 – Lighthouse.....D3-33
LTHOU2 – Lighthouse.....D3-33
LTMAJ1 – Major Floating Light.....D3-34
LTMAJ2 – Major Floating Light.....D3-34
LTMARK – Lighted Marker.....D3-34
LTMIN2 – Minor Floating Light.....D3-34
LTPLT1 – Lighted Platform.....D3-34
LTPLT2 – Lighted Platform.....D3-34
LTPLX – Existing Light Pole.....D3-34
LTSHP1 – Lighted Vessel Lightship..D3-34
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Geotechnical

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Civil

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Patterns

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ARRSD – Straight Direction Arrow....D5-15
ARRST – Straight and Turn Arrow.....D5-15
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GIID – Identification Sign.....D9-11
MFMATL – Furniture Material List ...D9-11
MFSCHD – Furniture Schedule D9-11
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Fire Protection

Lines

FIRE – Fire Protection Water Supply .D10-3
MANSUC – Suction Main D10-3
SPRINK – Main Supply Sprinkler D10-3
STDCOM – Standpipe Combination...D10-3
STDDRY – Dry Standpipe.....D10-3
STDWET – Wet Standpipe D10-3

Symbols

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ABORT – Abort Switch D10-7
ACCESS – Fire Department Access ...D10-7
AGSTCN – Agent Storage Container .D10-7
BELLFA – Fire Alarm Bell.....D10-7
BFPDCK – Backflow Preventer Double Check D10-7
BFPRPZ – Backflow Preventer RPZ ..D10-7
BOILER – Boiler.....D10-7
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CONSIA – Siamese Fire Department Connection.....D10-8
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CPHVA – Control Panel for HVAC ...D10-9
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WBDSMA – Water-Based Dry System Manually Actuated.....D10-21
WBDSSA – Water-Based Dry System Automatically Actuated D10-21
WBFSAA – Water-Based Foam System Automatically Actuated D10-21
WBFSMA – Water-Based Foam System Manually Actuated.....D10-21
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WBWSMA – Water-Based Wet System, Manually Actuated.....D10-21

Plumbing

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ACIDWS – Acid Waste.....D11-3
CDRNAF – Condensate Drain D11-3
CLDWTR – Potable Cold Water.....D11-3
CMPAIR – Compressed Air.....D11-3
DIOWTR – Deionized Water.....D11-3
DSTWTR – Distilled Water D11-3
FIRE – Fire Protection Water Supply .D11-3
FUELOR – Fuel Oil Return D11-3
FUELOS – Fuel Oil Supply D11-3
FUELOV – Fuel Oil Tank Vent D11-4
HELIUM – Helium.....D11-4
HWTR – Potable Hot Water.....D11-4
HWTRR – Potable Hot Water Return .D11-4
HYDRGN – Hydrogen D11-4
ICWTR – Industrial Cold Water D11-4
IHWTRR – Industrial Hot Water Return.....D11-4
IHWTRS – Industrial Hot Water Supply D11-4
INDDRN – Indirect Drain D11-4
LIQNIT – Liquid Nitrogen.....D11-5
LIQOXY – Liquid Oxygen D11-5
LIQPET – Liquid Petroleum Gas.....D11-5
NITOXI – Nitrous Oxide.....D11-5
NITROG – Nitrogen.....D11-5
NONPOT – Nonpotable Water D11-5
NTGASN – Natural Gas Piping D11-5
OXYGEN – Oxygen D11-5
PNTUBE – Pneumatic Tube Runs D11-5
ROOFDN – Roof Drain.....D11-6
SFCWTR – Soft Cold Water.....D11-6
SHWTRR – Sanitizing Hot Water Return (180F).....D11-6
SHWTRS – Sanitizing Hot Water Supply (180F) D11-6
SSWAF – Sanitary Sewer D11-6
STRAF – Storm Drain.....D11-6
VACAIR – Vacuum Air.....D11-6
VENT – Vent.....D11-6
VENTWS – Vent and Waste Combination.....D11-6

Symbols

CAPSC – Cap.....D11-9
DRNFUN – Open Drain Funnel.....D11-9
EL45SC – 45 Degree Elbow D11-9
EL90SC – 90 Degree Elbow D11-9
ELBSC – Base Elbow D11-9
ELDBSC – Double Branch Elbow.....D11-9
ELLRSC – Long Radius Elbow D11-9
ELODSC – Side Outlet Elbow, Outlet Down.....D11-9
ELOUSC – Side Outlet Elbow, Outlet Up.....D11-9
ELSTRT – Street Elbow.....D11-10
ELTDSC – Turned Down Elbow D11-10
ELTUSC – Turned Up Elbow D11-10
FCO – Floor Cleanout D11-10
FDCO – Floor Drain with Cleanout ..D11-10
FDDT – Floor Drain with Deep Trap D11-10
FDNT – Floor Drain with No Trap ...D11-10
FDTP – Floor Drain with Trap PrimeD11-10
FDWT – Floor Drain with Trap D11-10
FLBLND – Blind Flange.....D11-11
FLOW3 – Flow Arrow D11-11
FLRPEN – Iso. Floor Penetration D11-11
GAUGE – Gauge.....D11-11
HANGRD – Hanger Rod.....D11-11
HANGSP – Hanger Spring.....D11-11
ISOEWC – Isometric EWC.....D11-11
ISOLAV – Isometric Lavatories.....D11-11
ISOMOP – Isometric Mop Sink D11-11

ISOUR1 – Isometric Wall Mounted Urinals.....D11-12
ISOWC1 – Isometric Floor Mounted Water Closet D11-12
ISOWC2 – Isometric Wall Mounted Water Closet D11-12
LOOPL – Left Dimension Loop.....D11-12
LOOPR – Right Dimension Loop D11-12
PLGBFL – Bull Plug, Flanged.....D11-12
PLGPSC – Pipe Plug.....D11-12
PRGGCO – Press. Gauge and Cock..D11-12
PUMP – Pump.....D11-12
PUMPP – Pump (Schematic) D11-13
PUMPS – In-Line Pump.....D11-13
SLEEVE – Sleeve D11-13
STGLAS – Sight Glass.....D11-13
STRAIN – Strainer.....D11-13
STRBLO – Blow Off Strainer.....D11-13
TDSSC – Double Sweep Tee D11-13
THERM – Thermometer D11-13
TRAPST – Steam Trap.....D11-13
TSODSC – Tee, Side Outlet, Outlet Down.....D11-14
TSOUSC – Tee, Side Outlet, Outlet Up.....D11-14
TSSSC – Straight Size Tee.....D11-14
TSSWSC – Single Sweep Tee.....D11-14
UNIOSC – Union D11-14
VA3WAM – 3-Way Air Motor Controlled Valve.....D11-14
VA3WEM – 3-Way Electric Motor Controlled Valve.....D11-14
VA3WM – 3-Way Manual Valve D11-14
VAAHOS – Angle Hose Valve.....D11-14
VABALL – Ball Valve.....D11-15
VABFLY – Butterfly Valve D11-15
VACWR – Condenser Water Regulating Valve D11-15
VADISC – Diaphragm Valve D11-15
VAEMTR – Valve Actuator Electric Motor D11-15
VAESOL – Valve Actuator Electric Solenoid D11-15
VAGAMC – Air Motor Controlled Gate Valve D11-15
VAGLAM – Air Motor Controlled Globe Valve D11-15
VAGLE – Angle Globe Valve (Elevation) D11-15
VAGLSE – Globe Valve.....D11-16
VAGSE – Angle Gate Valve, (Elevation) D11-16
VAGSP – Angle Gate Valve (Plan) ..D11-16
VAGTSE – Gate Valve D11-16
VAHASC – Hose Angle Valve D11-16
VAHGLS – Hose Globe Valve D11-16
VAHGSC – Hose Gate Valve D11-16
VALSSC – Lock Shield Valve.....D11-16
VAMAGS – Magnetic Stop Valve....D11-16
VAMNNS – Valve Actuator Manual Nonrising Stem D11-17
VAMOGS – Motor Operated Gate Valve.....D11-17
VAMOLS – Motor Operated Globe Valve.....D11-17
VAMOSY – Valve Actuator Manual Outside Stem & Yoke D11-17
VANEED – Needle Valve.....D11-17
VAPLUG – Plug Valve.....D11-17
VAPMTD – Valve Actuator Pneumatic Motor Diaphragm.....D11-17
VAPRED – Pressure Reducing ValveD11-17
VAPRRD – Pressure Reducing ValveD11-17
VAQOSC – Quick Opening Valve....D11-18
VARELF – Relief or Safety Valve....D11-18
VASCE – Angle Globe Valve (Elevation) D11-18
VASCP – Angle Globe Valve (Plan) D11-18
VASFSC – Safety Valve D11-18
VASGCH – Swing Gate Check ValveD11-18
VASNAP – Snap Action Valve.....D11-18
VASOLN – Solenoid Valve D11-18
VASPCH – Spring Check Valve.....D11-18
VASTSC – Gate Elbow.....D11-19
VASWSC – Straight Way Check Valve.....D11-19
VATPR – Temperature Pressure Relief Valve D11-19
VLVCHK – Check Valve.....D11-19

Mechanical

Lines

ACIDWS – Acid Waste.....D12-3
AIRRLF – Atmospheric Vent D12-3

BOILBD – Boiler Blow Down.....D12-3
BRINER – Brine Return.....D12-3
BRINES – Brine Supply.....D12-3
CDRNAF – Condensate Drain D12-3
CMPAIR – Compressed Air.....D12-3
CONDP – Pumped Condensate.....D12-3
CONDWR – Condenser Water Return.D12-3
CONDWS – Condenser Water SupplyD12-4
CWR – Chilled Water Return.....D12-4
CWS – Chilled Water Supply D12-4
DTR – Dual Temperature Return D12-4
DTS – Dual Temperature Supply D12-4
FILL – Fill Line.....D12-4
FUELOR – Fuel Oil Return D12-4
FUELOS – Fuel Oil Supply D12-4
FUELOV – Fuel Oil Tank Vent D12-4
GHR – Glycol Heating Return D12-5
GHS – Glycol Heating Supply D12-5
HPCNDR – High Pressure CondensateD12-5
HTHWR – High Temperature Hot Water Return.....D12-5
HTHWS – High Temperature Hot Water Supply D12-5
HUMID – Humidification Line.....D12-5
HWR – Low Temperature Hot Water Return.....D12-5
HWS – Low Temperature Hot Water Supply D12-5
ICWTR – Industrial Cold Water D12-5
IHWTRR – Indust. Hot Water Return.D12-6
IHWTRS – Indust. Hot Water Supply.D12-6
IWASTE – Industrial Waste.....D12-6
LPCNDR – Low Pressure Condensate D12-6
MAKEUP – Make Up Water D12-6
MPCNDR – Medium Pressure Condensate.....D12-6
MTHWR – Medium Temperature Hot Water Return.....D12-6
MTHWS – Medium Temperature Hot Water Supply D12-6
NONPOT – Nonpotable Water D12-6
NTGASN – Natural Gas.....D12-7
PNTUBE – Pneumatic Tube Runs D12-7
REFRD – Refrigerant Discharge.....D12-7
REFRL – Refrigerant Liquid.....D12-7
REFRS – Refrigerant Suction D12-7
STEAMH – High Pressure Steam D12-7
STEAML – Low Pressure Steam D12-7
STEAMM – Medium Pressure Steam .D12-7
TUVANE – Turning Vanes.....D12-7
VACAIR – Vacuum Air.....D12-8
VACPD – Vacuum Pump Discharge...D12-8

Symbols

ACCDOR – Duct Access Door D12-11
AGUIDE – Alignment Guide.....D12-11
AIRELM – Air Eliminator D12-11
AIRIN – Air In D12-11
AIRSEP – Air Separator.....D12-11
ANCHRI – Anchor.....D12-11
AVENTA – Automatic Air Vent.....D12-11
AVENTM – Manual Air Vent.....D12-11
BALLJT – Ball Joint D12-11
BUSHSC – Bushing D12-12
CAPSC – Cap.....D12-12
CAPTUB – Capillary Tube D12-12
CDRND – Round Ceiling Diffuser ...D12-12
CDSQR – Square Ceiling Diffuser....D12-12
CFM2X3 – Airflow CFM.....D12-12
CFM2X4 – Airflow CFM.....D12-12
CFM3X4 – Airflow CFM.....D12-12
COCKSC – Cock.....D12-12
CREDSC – Concentric Reducer.....D12-13
CRSRSC – Cross.....D12-13
CUPJNT – Coupling Joint.....D12-13
DCTHTR – Electric Duct Heater D12-13
DMPEOC – Electric Operated Damper Control D12-13
DMPFIR – Fire Damper.....D12-13
DMPFS – Fire Smoke Damper.....D12-13
DMPPOD – Pneumatic Damper.....D12-13
DMPSMK – Smoke Damper.....D12-13
DPRSD – Duct Pressure Class DownD12-14
DPRSH – Duct Pressure Class Horiz D12-14
DPRSL – Duct Pressure Class Left ...D12-14
DPRSR – Duct Pressure Class Right.D12-14
DPRSU – Duct Pressure Class Up D12-14
DPRSV – Duct Pressure Class Vert ..D12-14
DRIER – Drier.....D12-14
EEQ2X2 – Electrical Equipment 2X2 Mark.....D12-14
EEQ2X3 – Electrical Equipment 2X3 Mark.....D12-14
EEQ2X4 – Electrical Equipment 2X4 Mark.....D12-15
EEQ3X2 – Electrical Equipment 3X2 Mark.....D12-15

EEQ3X3 – Electrical Equipment 3X3 Mark....D12-15
EEQ3X4 – Electrical Equipment 3X4 Mark....D12-15
EL45SC – 45 Degree Elbow....D12-15
EL90SC – 90 Degree Elbow....D12-15
ELBSC – Base Elbow....D12-15
ELDBSC – Double Branch Elbow....D12-15
ELLRSC – Long Radius Elbow....D12-15
ELODSC – Side Outlet Elbow, Outlet Down....D12-16
ELOUSC – Side Outlet Elbow, Outlet Up....D12-16
ELSTRT – Street Elbow....D12-16
ELTDSC – Turned Down Elbow....D12-16
ELTUSC – Turned Up Elbow....D12-16
EREDSC – Eccentric Reducer....D12-16
EXPJNT – Expansion Joint....D12-16
FANERV – Exhaust Roof Vent Fan .D12-16
FANLRV – Louvered Roof Vent Fan....D12-16
FANSRV – Intake Roof Vent Fan....D12-17
FLBLND – Blind Flange....D12-17
FLOW2 – Air Flow Direction ArrowD12-17
FLRPEN – Iso. Floor Penetration D12-17
FLXCON – Flexible Connector....D12-17
GAUGE – Gauge....D12-17
GRILEX – Exhaust Grille....D12-17
GRILSU – Supply Grille....D12-17
HANGRD – Hanger Rod....D12-17
HANGSP – Hanger Spring....D12-18
HSENS – Humidity Sensor....D12-18
HSTAT – Humidistat....D12-18
LNDIFF – Linear Diffuser....D12-18
LOOPL – Left Dimension Loop....D12-18
LOOPR – Right Dimension Loop....D12-18
LOUOPN – Door or Wall Louver Opening....D12-18
PIDROP – Pitch or Pipe Drop....D12-18
PIRISE – Pitch or Pipe Rise....D12-18
PLGBFL – Bull Plug, Flanged....D12-19
PLGPSC – Pipe Plug....D12-19
PRGGCO – Pressure Gage and Cock....D12-19
PSDIFF – Pump Suction Diffuser....D12-19
PUMP – Pump....D12-19
PUMPP – Pump (Schematic)....D12-19
PUMPS – In-Line Pump....D12-19
SCALET – Scale Trap....D12-19
SLEEVE – Sleeve....D12-19
STGLAS – Sight Glass....D12-20
STRAIN – Strainer....D12-20
STRBLO – Blow Off Strainer....D12-20
SUPOUT – Supply Outlet (Wall Supply)....D12-20
TDSSC – Double Sweep Tee....D12-20
THERM – Thermometer....D12-20
THERMW – Thermometer Well....D12-20
THHRB – Thermostat, Remote Bulb D12-20
THHSC – Thermostat, Self Contained (HVAC)....D12-20
THLPRS – Thermostat, Low PressureD12-21
THMCP – Thermostat, Microprocessor....D12-21
THPELE – Thermostat, Electric....D12-21
THPPNE – Thermostat, Pneumatic....D12-21
TMPSEN – Temperature Sensor....D12-21
TODSC – Tee, Outlet Down....D12-21
TOUSC – Tee, Outlet Up....D12-21
TRAPFL – Float Trap....D12-21
TRAPFT – Float and Thermostatic Trap....D12-21
TRAPST – Steam Trap....D12-22
TRAPTB – Thermostatic Blast Trap....D12-22
TSODSC – Tee, Side Outlet, Outlet Down....D12-22
TSOUSC – Tee, Side Outlet, Outlet Up....D12-22
TSSSC – Straight Size Tee....D12-22
TSSWSC – Single Sweep Tee....D12-22
UNIOSC – Union....D12-22
VA3WAM – 3-Way Air Motor Controlled Valve....D12-22
VA3WEM – 3-Way Electric Motor Controlled Valve....D12-22
VA3WM – 3-Way Manual Valve....D12-23
VAAHOS – Angle Hose Valve....D12-23
VABALL – Ball Valve....D12-23
VABFLY – Butterfly Valve....D12-23
VACWR – Condenser Water Regulating Valve....D12-23
VADISC – Diaphragm Valve....D12-23
VAEMTR – Valve Actuator Electric Motor....D12-23
VAESOL – Valve Actuator Electric Solenoid....D12-23
VAFLSC – Float Valve....D12-23

VAGAMC – Air Motor Controlled Gate Valve D12-24
VAGLAM – Air Motor Controlled Globe Valve D12-24
VAGLE – Angle Globe Valve D12-24
VAGLSE – Globe Valve.....D12-24
VAGSE – Angle Gate Valve.....D12-24
VAGSP – Angle Gate Valve.....D12-24
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VAHASC – Hose Angle Valve D12-24
VAHGLS – Hose Globe Valve D12-24
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VALSSC – Lock Shield Valve.....D12-25
VAMAGS – Magnetic Stop Valve....D12-25
VAMNNS – Valve Actuator Manual Nonrising Stem D12-25
VAMOGS – Motor Operated Gate Valve.....D12-25
VAMOLS – Motor Operated Globe Valve.....D12-25
VAMOSY – Valve Actuator Manual Outside Stem & Yoke D12-25
VANEED – Needle Valve.....D12-25
VAPLUG – Plug Valve.....D12-25
VAPMTD – Valve Actuator Pneumatic Motor Diaphragm.....D12-26
VAPRED – Pressure Reducing ValveD12-26
VAPRRD – Pressure Reducing Valve.....D12-26
VAQOSC – Quick Opening Valve....D12-26
VARELF – Relief or Safety Valve....D12-26
VASCE – Angle Globe Valve.....D12-26
VASCP – Angle Globe Valve D12-26
VASFSC – Safety Valve D12-26
VASGCH – Swing Gate Check ValveD12-26
VASNAP – Snap Action Valve.....D12-27
VASOLN – Solenoid Valve D12-27
VASPCH – Spring Check Valve.....D12-27
VASTSC – Gate Valve.....D12-27
VASWSC – Straight Way Check Valve.....D12-27
VATPR – Temperature Pressure Relief Valve D12-27

Electrical

Lines

BUSWAY – Busway.....D13-3
CABLTV – Cable TV D13-3
CCTV – Closed Circuit TV.....D13-3
COMARN – New Communication, Aerial D13-3
COMARX – Existing Communication, Aerial D13-3
COMUGN – New Communication, Underground D13-3
COMUGX – Existing Communication, Underground D13-3
CONDFL – Flexible Conduit D13-3
DUCTTR – Trolley Duct D13-3
EPARN – New Electrical Primary, Aerial D13-4
EPARX – Existing Electrical Primary, Aerial D13-4
EPUGN – New Electrical Primary, Underground D13-4
EPUGX – Existing Electrical Primary, Underground D13-4
ESARN – New Electrical Secondary, Aerial D13-4
ESARX – Existing Electrical Secondary, Aerial D13-4
ESUGN – New Electrical Secondary, Underground D13-4
ESUGX – Existing Electrical Secondary, Underground D13-4
EUDUCN – New Duct Bank, Underground D13-4
EUDUCX – Existing Duct Bank, Underground D13-5
FIBOPT – Fiber Optics Line D13-5
INTCOM – Intercom.....D13-5
LADDER – Cable Ladder D13-5
NURSE – Nurse Call.....D13-5
PHONE – Telephone.....D13-5
WIREWY – Wireway D13-5

Symbols

1DIR – Direction Arrow.....D13-9
2DIR – Double Direction Arrow.....D13-9
2WAYMC – 2-Way Radio Mic. D13-9

ACCBIO – Biometric Access Control.D13-9
ACLLEL – Elevated Approach Lightbar.....D13-9
ACLLSF – Semiflush Approach Lightbar.....D13-9
AERROD – Aerial Rod.....D13-9
AFBCN – Airfield Beacon.....D13-9
ANNUN – Annunciator.....D13-9
ANNUNT – Local Control Annunciation Unit.....D13-10
ARREST – Lightning Arrestor.....D13-10
AUDIO – Audio.....D13-10
BARMKR – Barrier Marker.....D13-10
BATTRY – Battery.....D13-10
BEAM – Bi-Static Beam Sensor.....D13-10
BELL – Bell.....D13-10
BIORDR – Biometrics Access Ctrl..D13-10
BUTTON – Button.....D13-10
BUZZER – Buzzer.....D13-11
CAMFXD – Camera.....D13-11
CAMPTZ – Camera w/P/T/Zoom.....D13-11
CAPCTR – Capacitor.....D13-11
CARDRD – Card Reader.....D13-11
CBDOUT – Drawout Circuit BreakerD13-11
CBMCAS – Molded Case Circuit Breaker.....D13-11
CELLTX – Cellular Transmitter.....D13-11
CHIME – Chime.....D13-11
CKTID – Circuit ID Symbol.....D13-12
CLOCKW – Clock Outlet, Wall Mounted.....D13-12
CMHLN – New Communication Manhole.....D13-12
CMHLX – Existing Communication Manhole.....D13-12
CMPANL – Communication Panel...D13-12
CPLTM – Circuit Line Terminator...D13-12
CPREC2 – Cathodic Protection Rectifier.....D13-12
CPSAN – Cathodic Protection Sacrificial Anode.....D13-12
CPTEST – Cathodic Protection Test Station.....D13-12
CPU – Central Processing Unit.....D13-13
CRDRDR – Card Access Reader.....D13-13
CTRLPL – Control Panel.....D13-13
DBID – Ductbank ID Symbol.....D13-13
DGUYN – New Downguy.....D13-13
DGUYR – To Be Removed Downguy.....D13-13
DOROPN – Electric Door Opener....D13-13
DORREV – Revolving Door.....D13-13
DSTMKR – Runway Distance Marker.....D13-13
DTHL – Displaced Threshold Light..D13-14
DXFMR – Dry Type Transformer....D13-14
EHHLN – New Electrical Handhole .D13-14
EHHLX – Exist. Electrical HandholeD13-14
ELBP1L – 1 Lamp Emergency LightD13-14
ELBP2L – 2 Lamp Emergency LightD13-14
ELBP3L – 3 Lamp Emergency LightD13-14
ELLOCK – Electronic Lock.....D13-14
EMHLN – New Electrical Manhole..D13-14
EMHLX – Exist. Electrical Mahole..D13-15
EPBXN – New Electrical Pullbox.....D13-15
EPBXX – Exist. Electrical Pullbox...D13-15
ERECPT – Emergency Receptacle....D13-15
EXITCM – Ceiling Mtd. Exit Light..D13-15
EXITDV – Exit Device.....D13-15
EXITLF – Exit Sign, Lighted Face...D13-15
EXITWM – Wall Mounted Exit Sign Light.....D13-15
FAN – Ceiling Fan.....D13-15
FIBMOD – Fiber Optic Module.....D13-16
FIXSPB – Surface Pendant Battery Fixture.....D13-16
FIXSPQ – Surface Pendant Battery Quartz Restrike.....D13-16
FIXSPR – Surface Pendant Battery Receptacle.....D13-16
FIXWM – Wall Mounted Fixture.....D13-16
FIXWMB – Wall Mounted Battery Fixture.....D13-16
FL14WB – 1 X 4 Wall Mounted Fixture w/Battery.....D13-16
FL14WM – 1 X 4 Wall Mounted Fixture.....D13-16
FL1X4 – 1 X 4 Light Fixture.....D13-16
FL1X4B – 1 X 4 Light Fixture w/Battery.....D13-17
FL1X4C – 1 X 4 Light Fixture, Continuous.....D13-17
FL2X2 – 2 X 2 Light Fixture.....D13-17
FL2X2B – 2 X 2 Light Fixture w/Battery.....D13-17
FL2X2C – 2 X 2 Light Fixture, Continuous.....D13-17

FL2X4 – 2 X 4 Light Fixture D13-17
FL2X4B – 2 X 4 Light Fixture w/Battery.....D13-17
FL2X4C – 2 X 4 Light Fixture, Continuous.....D13-17
FLDPNL – Field Panel.....D13-17
FLTN – New Floodlight.....D13-18
FLTR – To Be Removed Floodlight .D13-18
FLTX – Existing Floodlight.....D13-18
FUSRAT – Fuse with Rating D13-18
GENRTR – Generator.....D13-18
GLASBR – Glass Breakage Sensor...D13-18
GRDROD – Grounding Rod.....D13-18
GROUND – Earth Ground.....D13-18
HAS1H – 1 Hot Leg.....D13-18
HAS1N – 1 Neutral Leg.....D13-19
HAS1S – 1 Switch Leg D13-19
HAS2H – 2 Hot Legs D13-19
HAS2S – 2 Switch Legs.....D13-19
HAS3HN – 3 Hot, 1 Neutral Leg D13-19
HAS3MK – Hot/Neutral/Ground D13-19
HAS3S – 3 Switch Legs.....D13-19
HAS4MK – 2 Hot/Neutral/Ground ...D13-19
HAS5MK – 3 Hot/Neutral/Ground ...D13-19
HASGND – 1 Ground Leg.....D13-20
HEDASW – Aerial Service Weather Head.....D13-20
HLL – Hoverlane.....D13-20
HLLL – Hoverlane Limit Light.....D13-20
HPIL – Helipad Inset Light.....D13-20
HPPLEL – Elevated Helipad Perimeter Light D13-20
HPPLSF – Semiflush Helipad Perimeter Light D13-20
HRUN1 – Home Run D13-20
HRUN2 – Home Run D13-20
HRUN3 – Home Run D13-21
INTCOM – Intercom.....D13-21
JNBX – Junction Box.....D13-21
JNBXWM – Wall Mtd. Junction BoxD13-21
KEYBRD – Keyboard.....D13-21
KEYPAD – Keypad Device D13-21
KNR – Keyed Note Reference D13-21
KNRM – Keyed Note Reference.....D13-21
LEADER – Leader Line.....D13-21
LTPLN – New Light Pole D13-22
LTPLR – To Be Removed Light PoleD13-22
LTPLX – Existing Light Pole D13-22
METREL – Electrical Meter D13-22
MICROW – Outdoor Microwave Transmit Unit.....D13-22
MONITR – Monitor D13-22
MOTION – Motion Detector.....D13-22
MOTRHP – Motor HP D13-22
OBSTRL – Obstruction Light D13-22
PAPI – PAPI Light Unit.....D13-23
PBFMC – Flush Mounted Panelboard Cabinet D13-23
PBSMC – Surface Mounted Panelboard/Cabinet.....D13-23
PHOTO – Photoelectric Relay D13-23
POLEAR – Aerial Pole w/Guying D13-23
POLEID – Pole Ident. Symbol D13-23
PRINTR – Printer.....D13-23
PSHST1 – One Pushbutton Station ...D13-23
PSHST2 – Two Pushbutton Station ..D13-23
PSHST3 – Three Pushbutton Station D13-24
PWRDVC – Power System Device...D13-24
PWRSPY – Power Supply D13-24
RCNC – Normally Closed Relay Contact.....D13-24
RCNO – Normally Open Relay Contact.....D13-24
RDRKPD – Card Reader w/Keypad .D13-24
RECDER – Recorder.....D13-24
RECDFM – Floor Outlet, Double Flush Mounted D13-24
RECDSM – Double Surf Mount Floor Outlet.....D13-24
RECDUP – Duplex Receptacle D13-25
RECLOS – Recloser Aerial Automatic.....D13-25
RECPT2 – Special Receptacle D13-25
RECQUA – Quadraplex Receptacle..D13-25
RECRAN – Receptacle Range D13-25
RECSDP – Switched Duplex Receptacle D13-25
RECSFM – Floor Outlet, Single Flush Mounted D13-25
RECSIN – Single Receptacle D13-25
RECSNS – Single Receptacle with Switch D13-25
RECSPR – Special Purpose Receptacle D13-26
RECSSM – Single Surf Mount Floor Outlet.....D13-26
REIL – Reil Light Unit.....D13-26
RELAY – Relay. D13-26
RELYOP – Relay OP Coil D13-26

RESHTR – Elec. Resistance Heater..D13-26
RWCLL – Runway Center Light D13-26
RWEL – Runway End Light D13-26
RWLEL – Elevated Runway Edge Light.....D13-26
RWLSF – Semiflush Runway Edge Light.....D13-27
S3ABC – 3 Three Way Switches. D13-27
SABC – 3 Single Switches. D13-27
SCRDEV – Screening Device. D13-27
SECSA – Security Screen w/Alarm. .D13-27
SECSW – Security Window Screen..D13-27
SECTAA – Sectionalizer Aerial Auto D13-27
SENGV – Generic Volumetric Sensor.....D13-27
SENULS – Ultrasonic Sensor. D13-27
SFL – Sequenced Flasher Light D13-28
SHREDR – Document Destroyer. D13-28
SLLN – New Streetlight. D13-28
SLLR – To Be Removed Streetlight. D13-28
SLLX – Existing Streetlight. D13-28
SLREG – Constant Current Transformer.....D13-28
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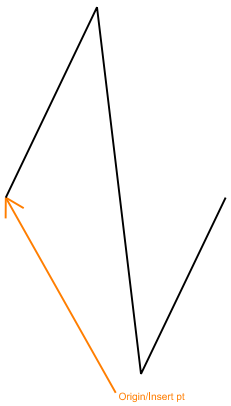
1 General Lines Library

General: DEMO DEMOLITION LINE (NCS) Element type: Line	General: DEMOLN DEMOLITION LINE (AEC) Element type: Line

1 General Symbols Library



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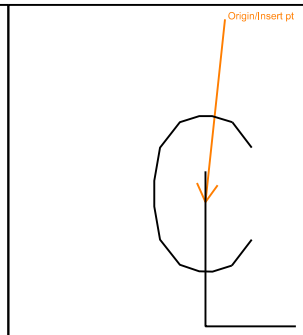

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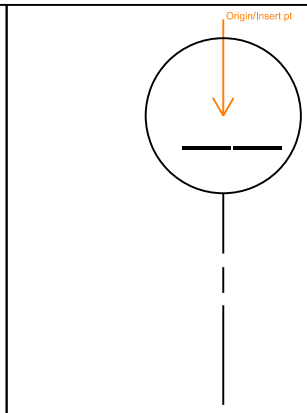

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COLUMN LINE GRID INDICATOR
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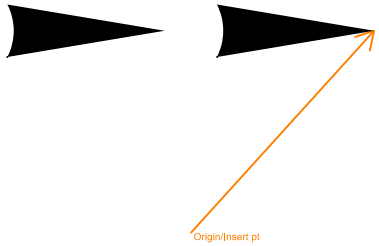

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DOUBLE ARROW TERMINATOR
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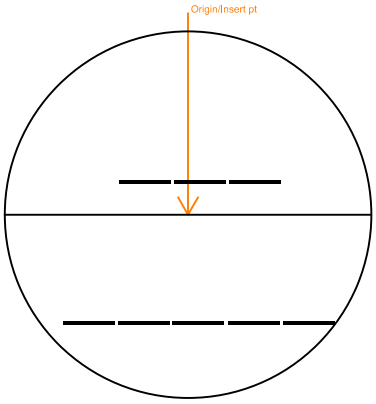

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DETAIL INDICATOR
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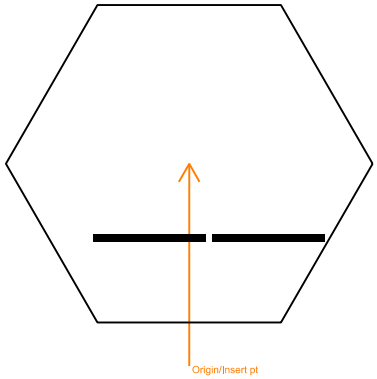

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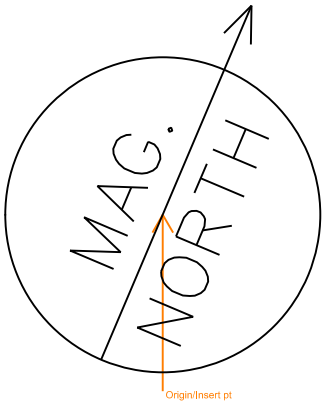
KEYNOTE INDICATOR
Element type: Symbol



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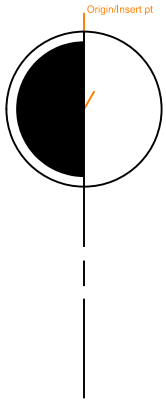
MAGNETIC NORTH ARROW
Element type: Symbol



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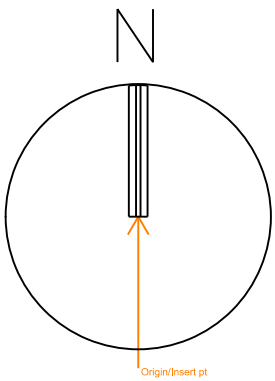

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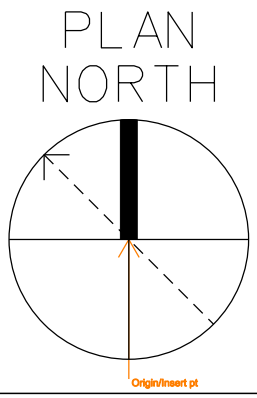
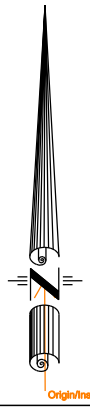
NORTH INDICATOR
Element type: Symbol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	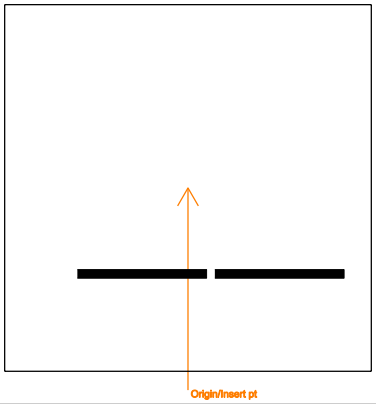	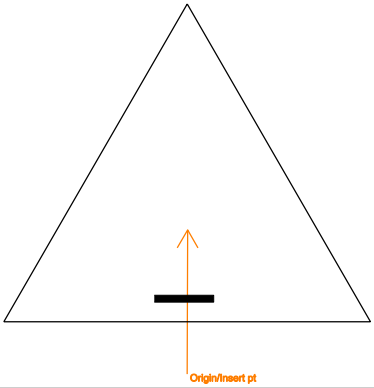
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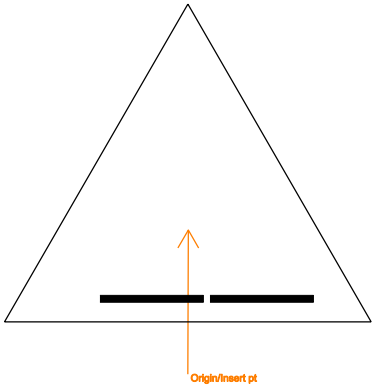
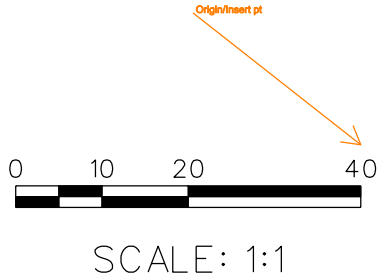
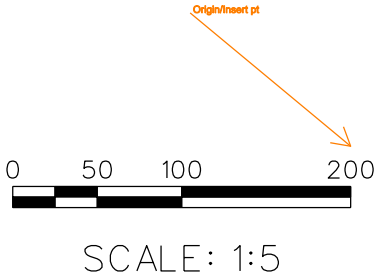
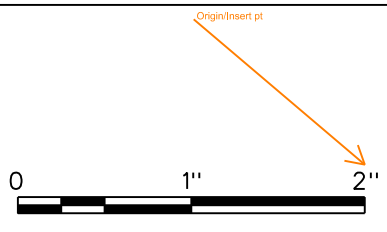
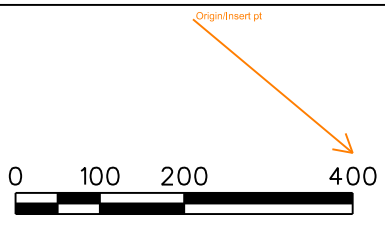
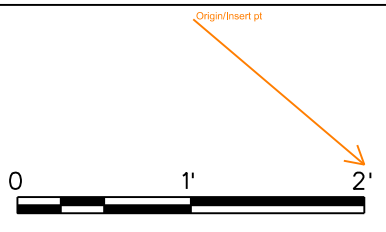
		
General: REVID2 REVISION INDICATOR 2CHARACTERS **Element type: Symbol**	**General: S00001** SCALE 1 EQ 1 (metric) **Element type: Symbol**	**General: S00005** SCALE 1 EQ 5 (metric) **Element type: Symbol**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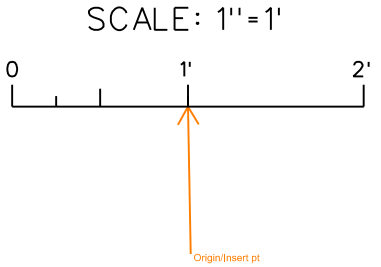	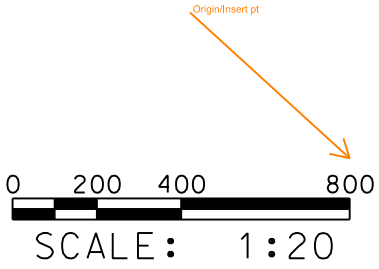	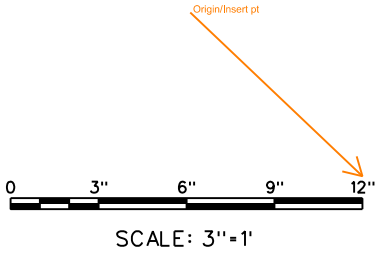
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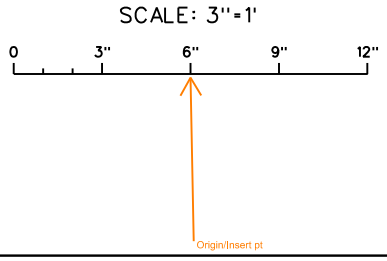	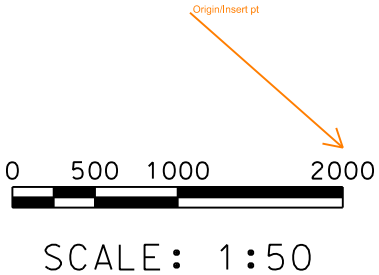	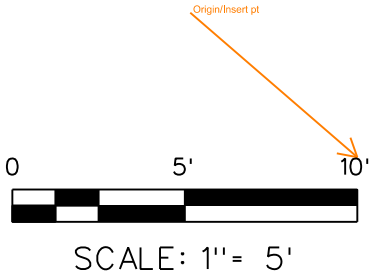
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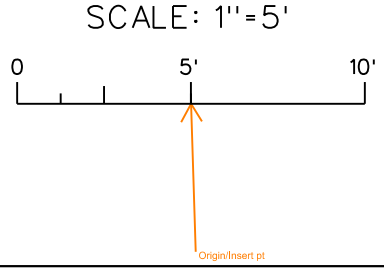	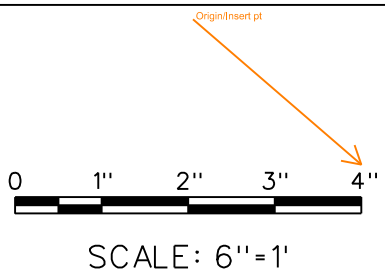	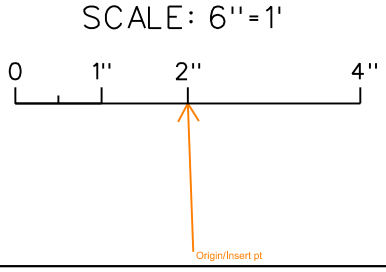
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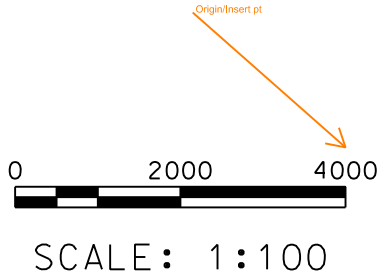
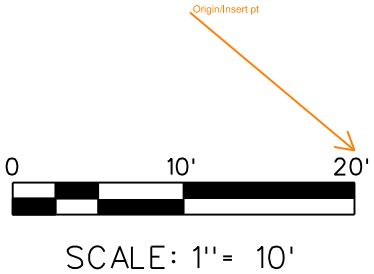
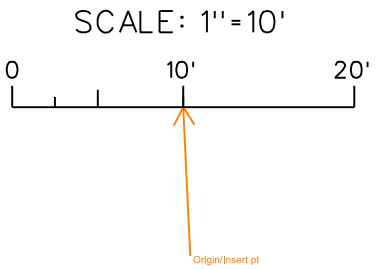
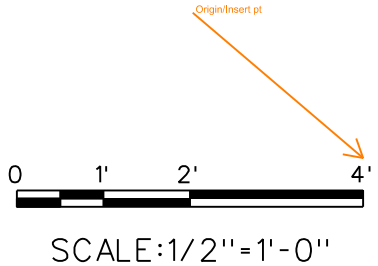
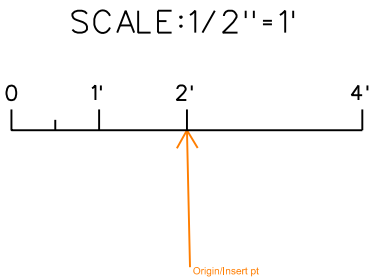
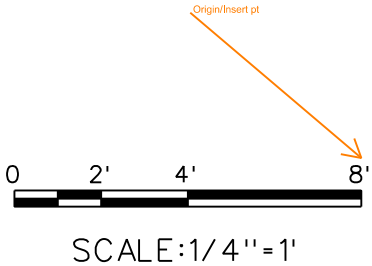
		
General: S00100 SCALE 1 EQ 100 (metric) Element type: Symbol	General: S0010B SCALE 1IN EQ 10FT Element type: Symbol	General: S0010G SCALE 1IN EQ 10FT Element type: Symbol
		
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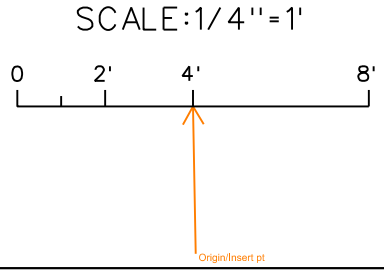	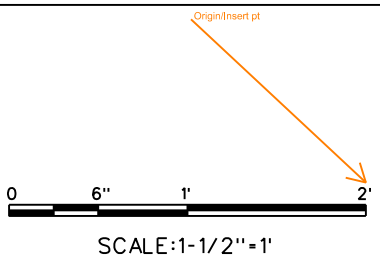	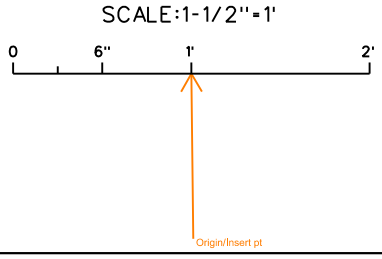
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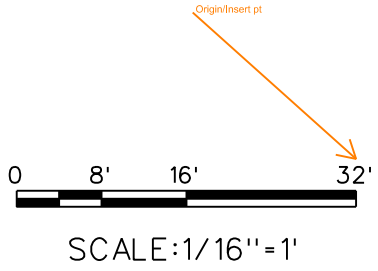
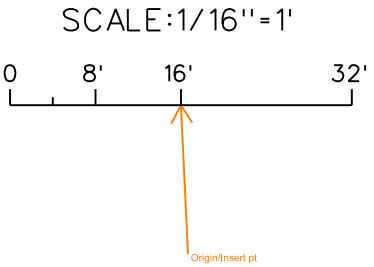
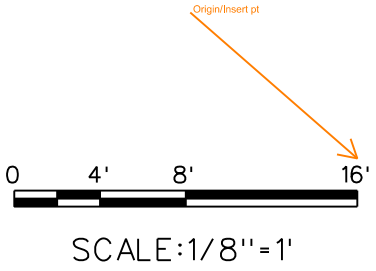
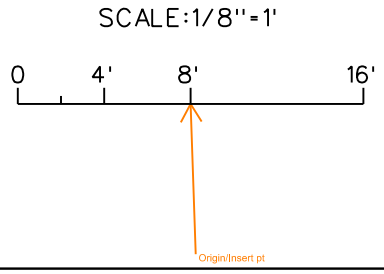
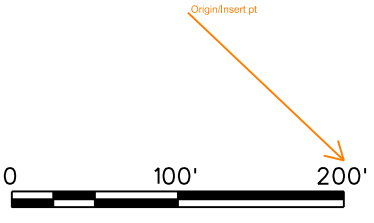
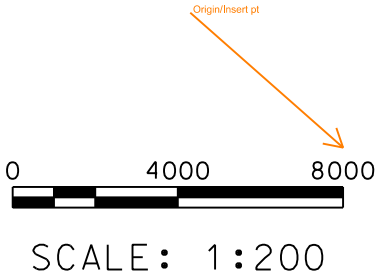
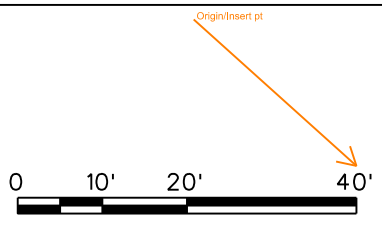
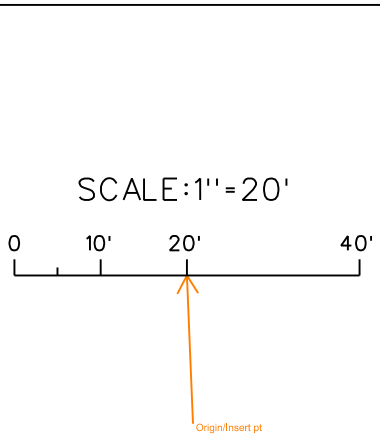
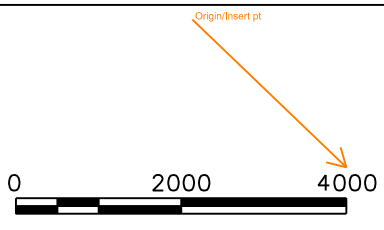
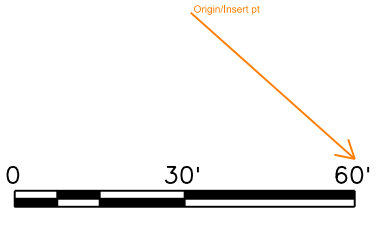
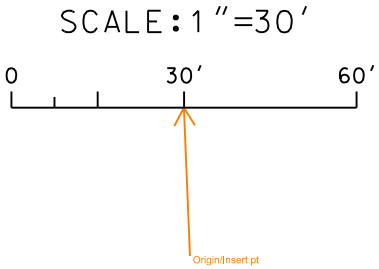
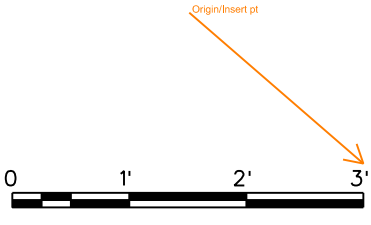
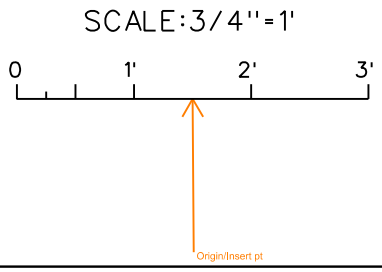
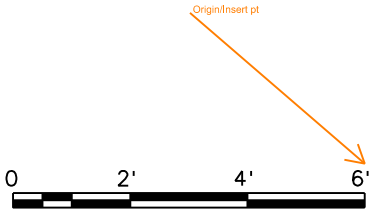
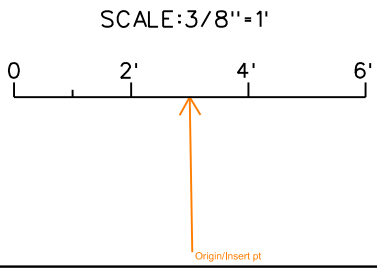
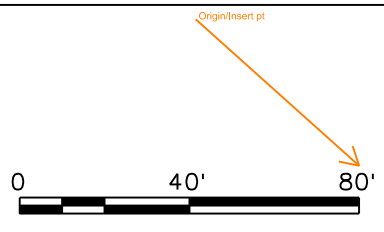
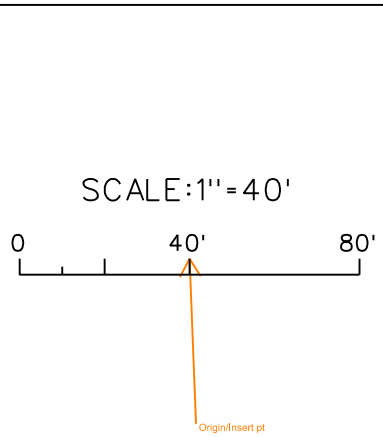
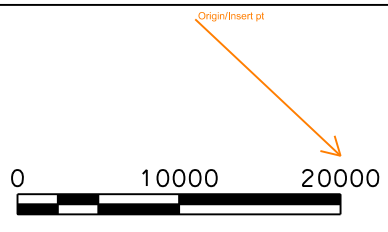
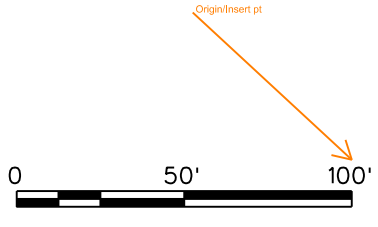
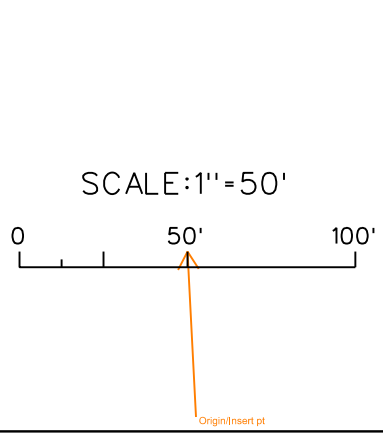
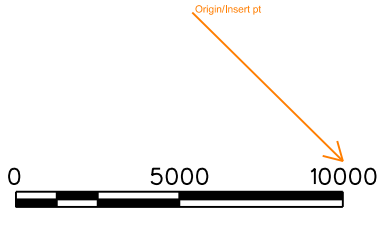
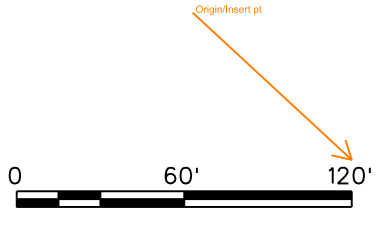
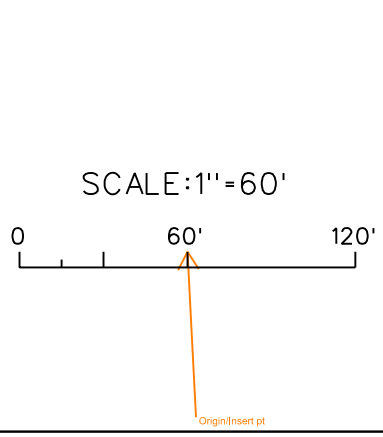
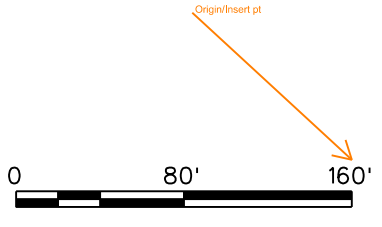
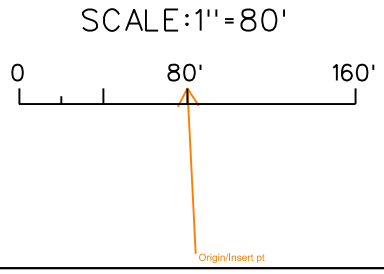
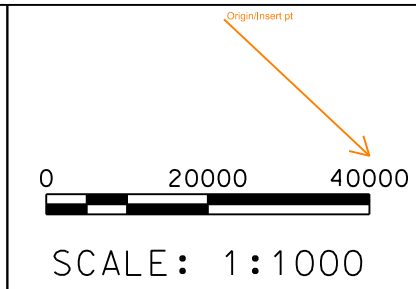
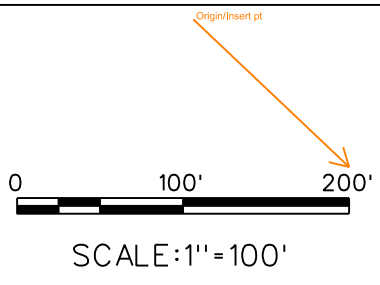
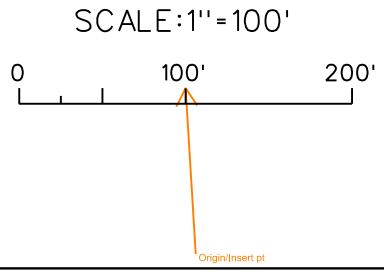
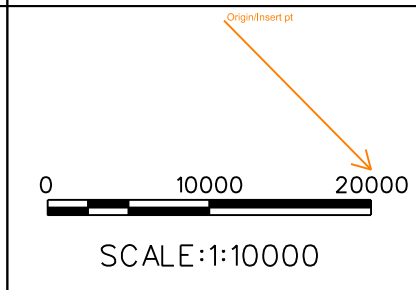
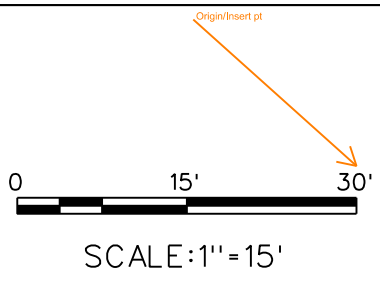
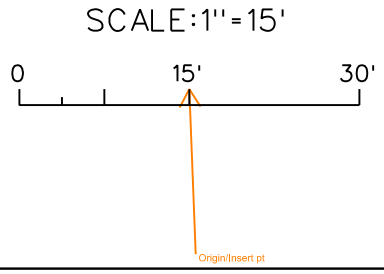
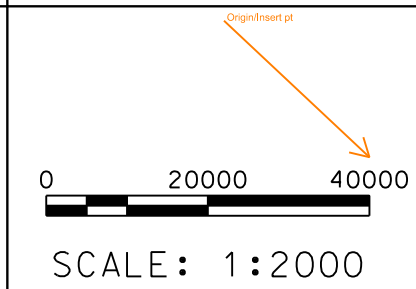
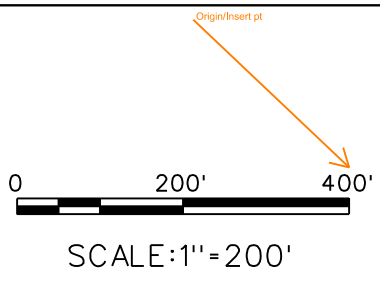
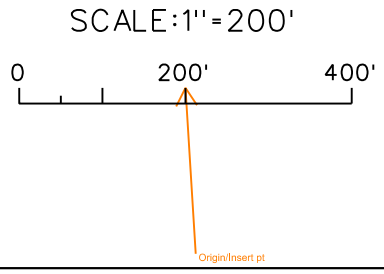
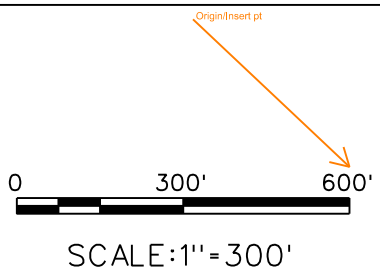
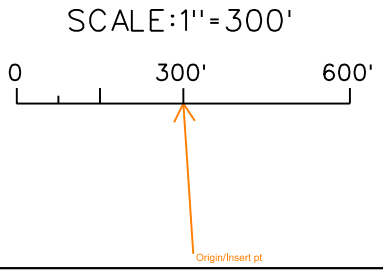
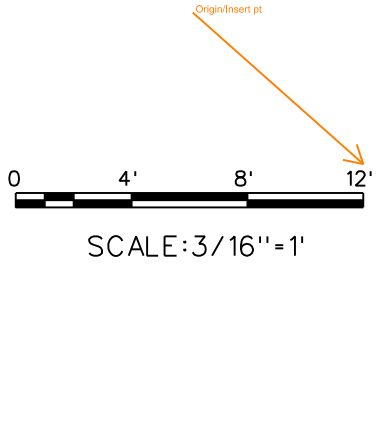
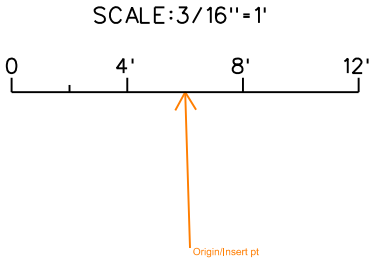
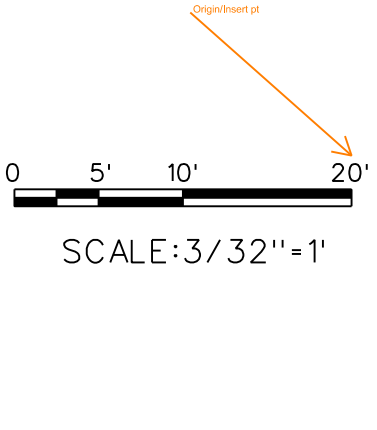
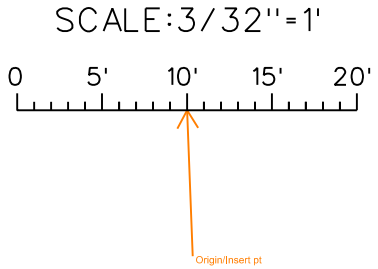
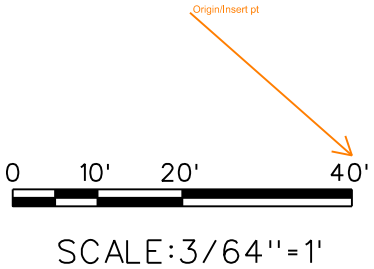
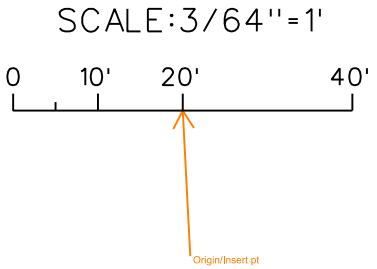
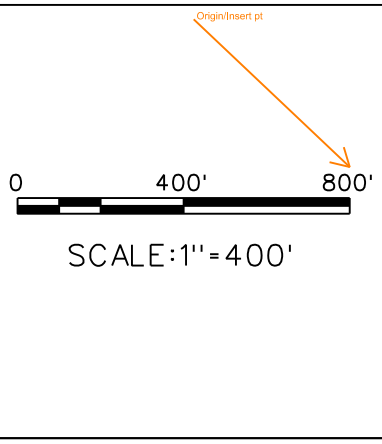
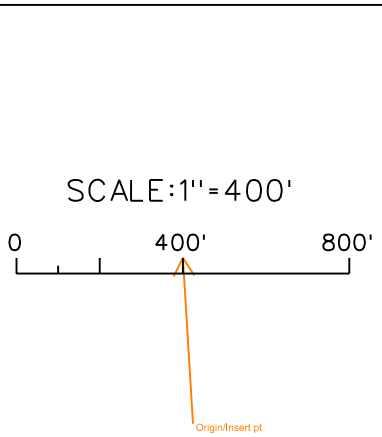
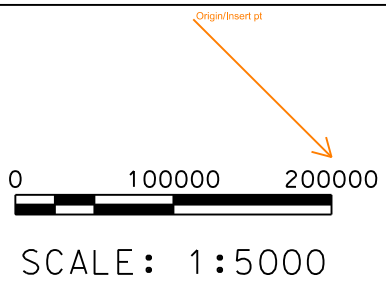
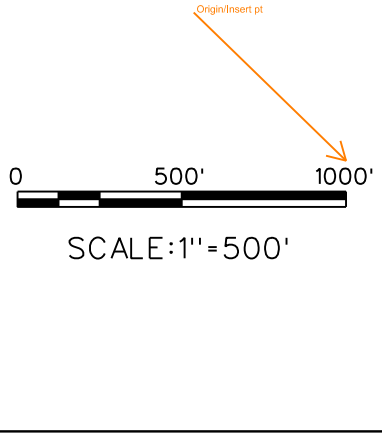
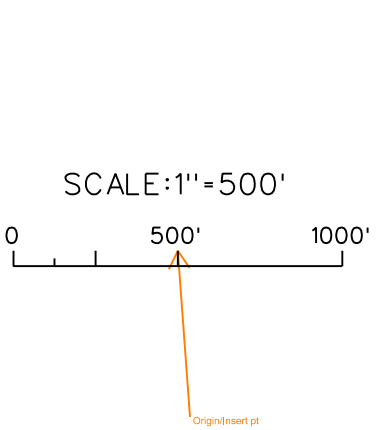
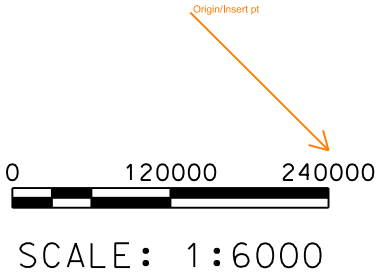
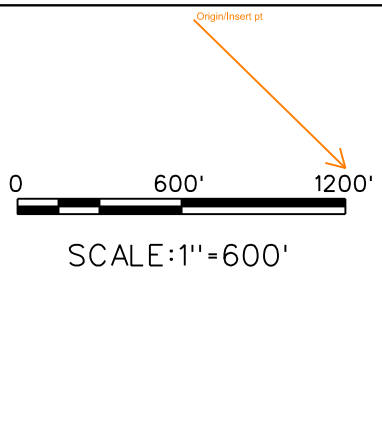
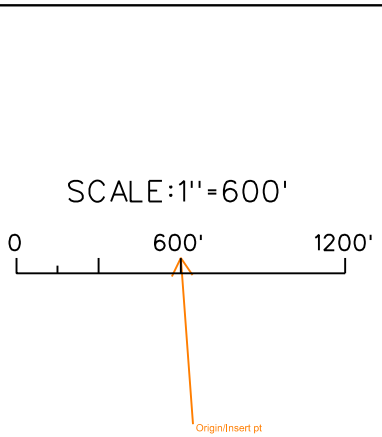
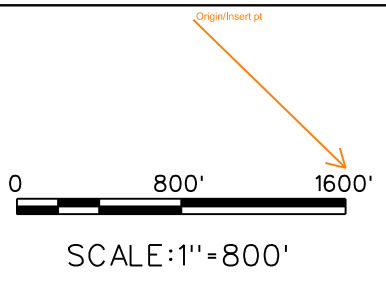
		
General: S0016B SCALE 1/16IN EQ 1FT Element type: Symbol	General: S0016G SCALE 1/16IN EQ 1FT Element type: Symbol	General: S0018B SCALE 1/8IN EQ 1FT Element type: Symbol
		
General: S0018G SCALE 1/8IN EQ 1FT Element type: Symbol	General: S001KB SCALE 1 EQ 1000 (imperial) Element type: Symbol	General: S00200 SCALE 1 EQ 200 (metric) Element type: Symbol

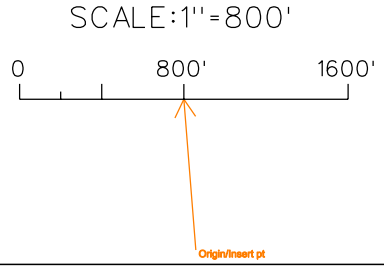
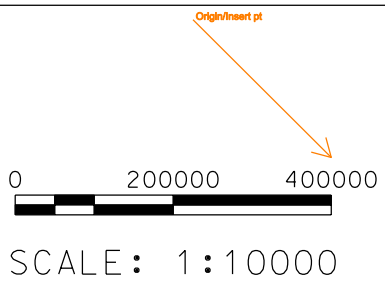
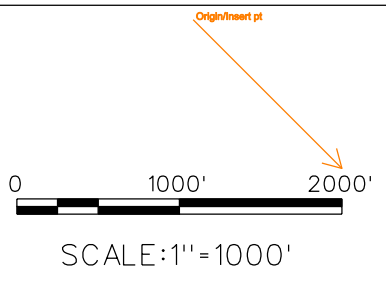
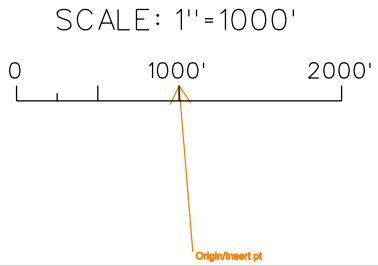
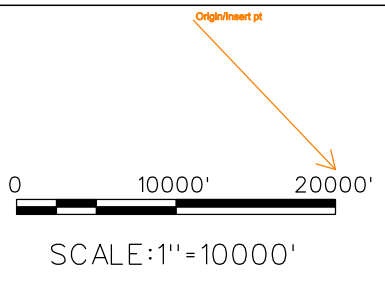
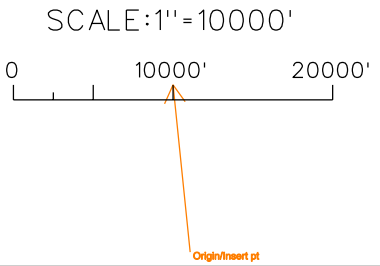
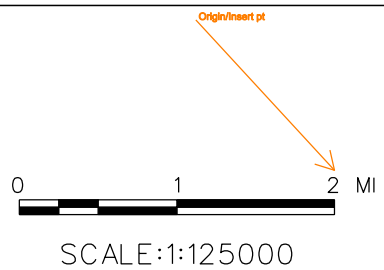
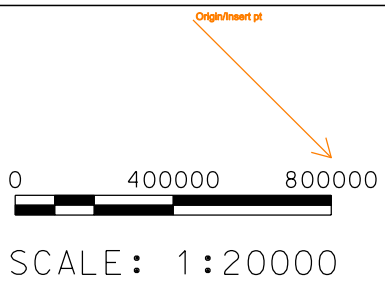
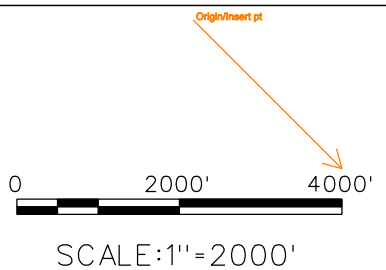
		
General: S0020B SCALE 1IN EQ 20FT Element type: Symbol	General: S0020G SCALE 1IN EQ 20FT Element type: Symbol	General: S002KB SCALE 1 EQ 2000 (imperial) Element type: Symbol
		
General: S0030B SCALE 1IN EQ 30FT Element type: Symbol	General: S0030G SCALE 1IN EQ 30FT Element type: Symbol	General: S0034B SCALE 3/4IN EQ 1FT Element type: Symbol
		
General: S0034G SCALE 3/4IN EQ 1FT Element type: Symbol	General: S0038B SCALE 3/8IN EQ 1FT Element type: Symbol	General: S0038G SCALE 3/8IN EQ 1FT Element type: Symbol

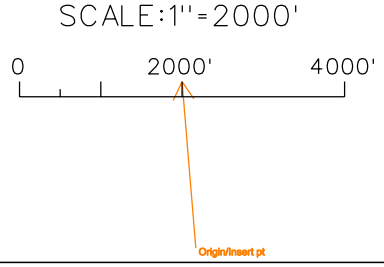
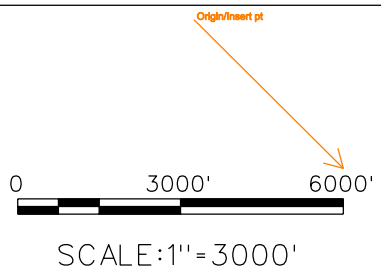
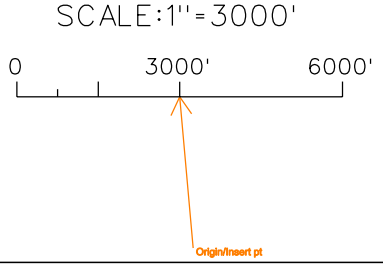
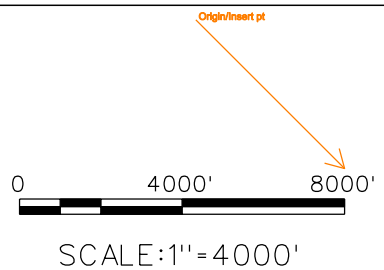
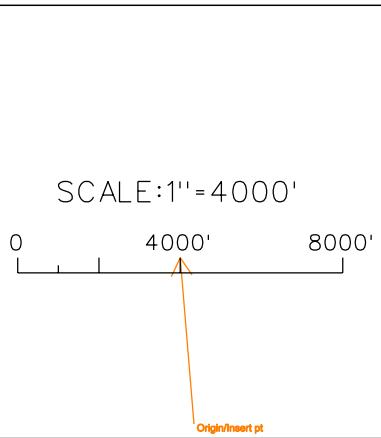
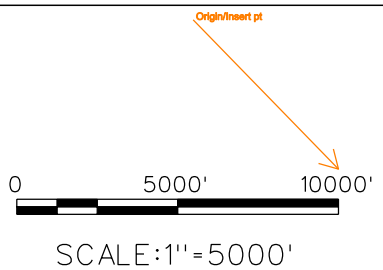
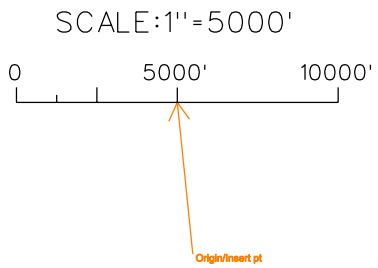
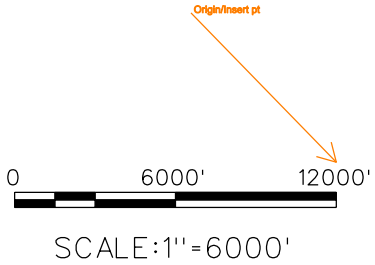
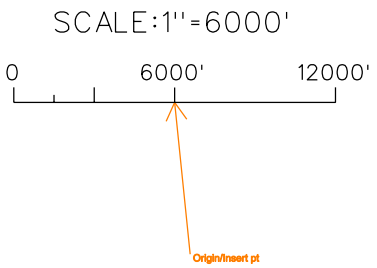
		
General: S0040B SCALE 1IN EQ 40FT Element type: Symbol	General: S0040G SCALE 1IN EQ 40FT Element type: Symbol	General: S00500 SCALE 1 EQ 500 (metric) Element type: Symbol
		
General: S0050B SCALE 1IN EQ 50FT Element type: Symbol	General: S0050G SCALE 1IN EQ 50FT Element type: Symbol	General: S005KB SCALE 1 EQ 5000 (imperial) Element type: Symbol
		
General: S0060B SCALE 1IN EQ 60FT Element type: Symbol	General: S0060G SCALE 1IN EQ 60FT Element type: Symbol	General: S0080B SCALE 1IN EQ 80FT Element type: Symbol

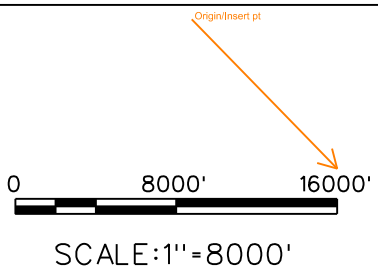
		
General: S0080G SCALE 1IN EQ 80FT Element type: Symbol	General: S01000 SCALE 1 EQ 1000 (metric) Element type: Symbol	General: S0100B SCALE 1IN EQ 100FT Element type: Symbol
		
General: S0100G SCALE 1IN EQ 100FT Element type: Symbol	General: S010KB SCALE 1 EQ 10000 (imperial) Element type: Symbol	General: S0150B SCALE 1IN EQ 15FT Element type: Symbol
		
General: S0150G SCALE 1IN EQ 15FT Element type: Symbol	General: S02000 SCALE 1 EQ 2000 (metric) Element type: Symbol	General: S0200B SCALE 1IN EQ 200FT Element type: Symbol

		
General: S0200G SCALE 1IN EQ 200FT Element type: Symbol	General: S0300B SCALE 1IN EQ 300FT Element type: Symbol	General: S0300G SCALE 1IN EQ 300FT Element type: Symbol
		
General: S0316B SCALE 3/16IN EQ 1FT Element type: Symbol	General: S0316G SCALE 3/16IN EQ 1FT Element type: Symbol	General: S0332B SCALE 3/32IN EQ 1FT Element type: Symbol
		
General: S0332G SCALE 3/32IN EQ 1FT Element type: Symbol	General: S0364B SCALE 3/64IN EQ 1FT Element type: Symbol	General: S0364G SCALE 3/64IN EQ 1FT Element type: Symbol

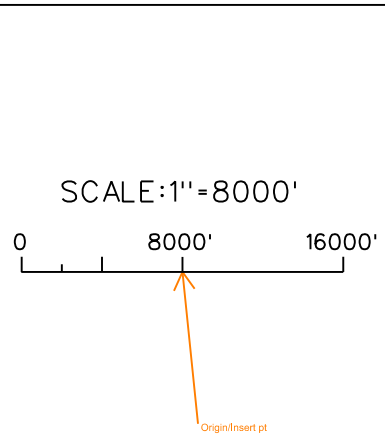
		
General: S0400B SCALE 1IN EQ 400FT Element type: Symbol	General: S0400G SCALE 1IN EQ 400FT Element type: Symbol	General: S05000 SCALE 1 EQ 5000 (metric) Element type: Symbol
		
General: S0500B SCALE 1IN EQ 500FT Element type: Symbol	General: S0500G SCALE 1IN EQ 500FT Element type: Symbol	General: S06000 SCALE 1 EQ 6000 (metric) Element type: Symbol
		
General: S0600B SCALE 1IN EQ 600FT Element type: Symbol	General: S0600G SCALE 1IN EQ 600FT Element type: Symbol	General: S0800B SCALE 1IN EQ 800FT Element type: Symbol

		
General: S0800G SCALE 1IN EQ 800FT **Element type: Symbol**	**General: S10000** SCALE 1 EQ 10000 (metric) **Element type: Symbol**	**General: S1000B** SCALE 1IN EQ 1000FT **Element type: Symbol**
		
General: S1000G SCALE 1IN EQ 1000FT **Element type: Symbol**	**General: S10K0B** SCALE 1IN EQ 10000FT **Element type: Symbol**	**General: S10K0G** SCALE 1IN EQ 10000FT **Element type: Symbol**
		
General: S125KB SCALE 1 EQ 125000 (imperial) **Element type: Symbol**	**General: S20000** SCALE 1 EQ 20000 (metric) **Element type: Symbol**	**General: S2000B** SCALE 1IN EQ 2000FT **Element type: Symbol**

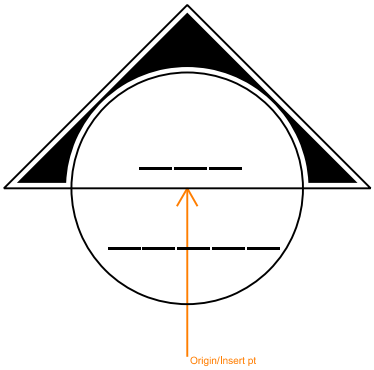
		
General: S2000G SCALE 1IN EQ 2000FT **Element type: Symbol**	**General: S3000B** SCALE 1IN EQ 3000FT **Element type: Symbol**	**General: S3000G** SCALE 1IN EQ 3000FT **Element type: Symbol**
		
General: S4000B SCALE 1IN EQ 4000FT **Element type: Symbol**	**General: S4000G** SCALE 1IN EQ 4000FT **Element type: Symbol**	**General: S5000B** SCALE 1IN EQ 5000FT **Element type: Symbol**
		
General: S5000G SCALE 1IN EQ 5000FT **Element type: Symbol**	**General: S6000B** SCALE 1IN EQ 6000FT **Element type: Symbol**	**General: S6000G** SCALE 1IN EQ 6000FT **Element type: Symbol**



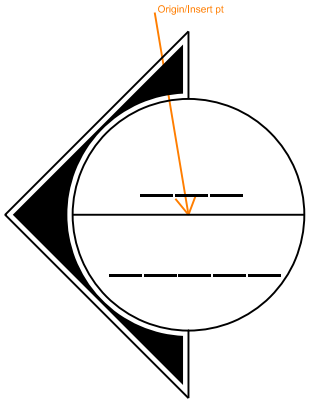
General: S8000B
SCALE 1IN EQ 8000FT
Element type: Symbol



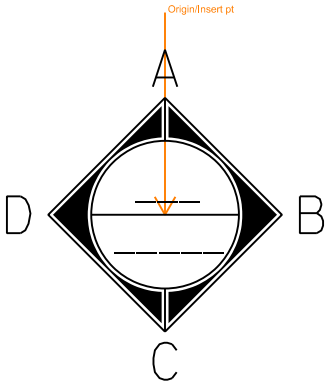
General: S8000G
SCALE 1IN EQ 8000FT
Element type: Symbol



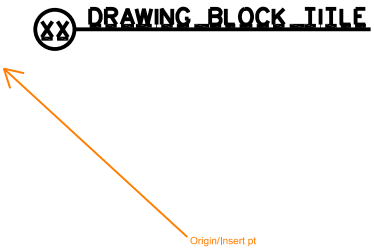
General: SECIN1
SECTION ELEVATION INDICATOR
Element type: Symbol



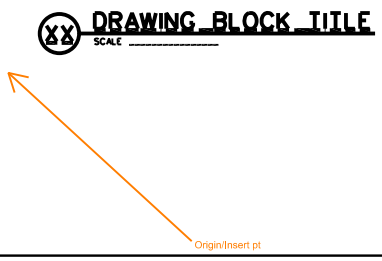
General: SECIN2
SECTION ELEVATION INDICATOR
Element type: Symbol



General: SECIN3
SECTION ELEVATION INDICATOR
Element type: Symbol

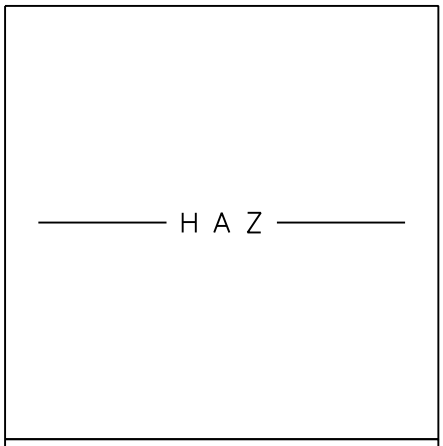


General: TITLE1
DRAWING BLOCK TITLE
Element type: Symbol



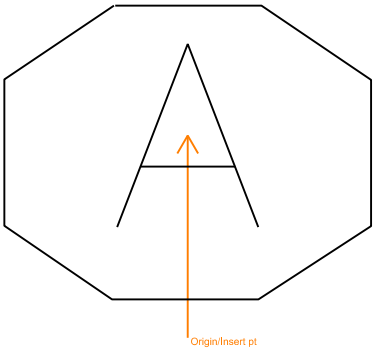
General: TITLE2
DRAWING BLOCK TITLE
Element type: Symbol

2 Hazardous Materials Lines Library

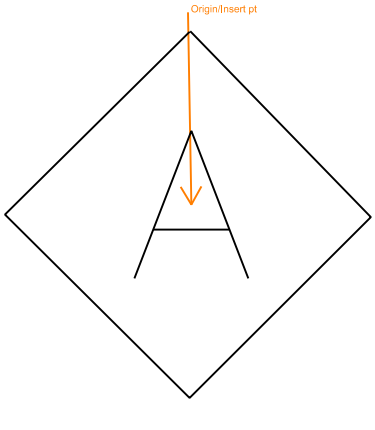


Hazardous Materials: HAZMAT
HAZARDOUS MATERIALS
Element type: Line

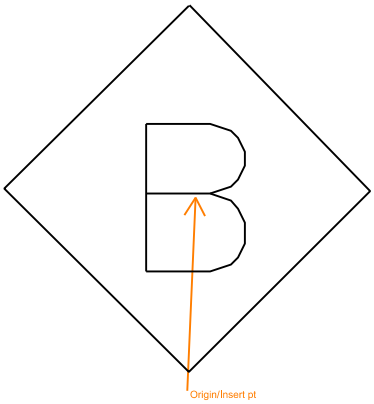
2 Hazardous Materials Symbols Library



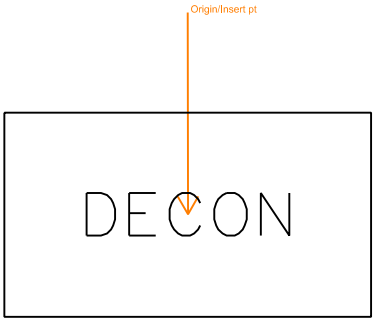
Hazardous Materials: AIRQST
AIR QUALITY MON STA
Element type: Symbol



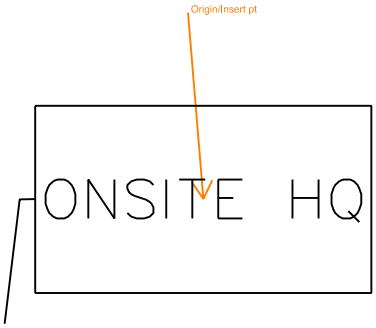
Hazardous Materials: AIRSMP
AIR SAMPLE LOCATION
Element type: Symbol



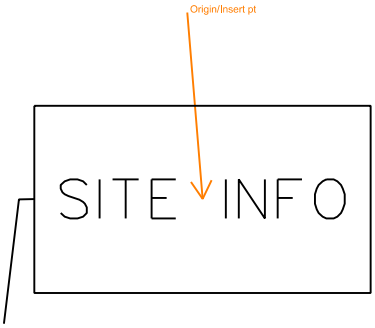
Hazardous Materials: BIOSMP
BIOLOGICAL SAMPLE LOC
Element type: Symbol



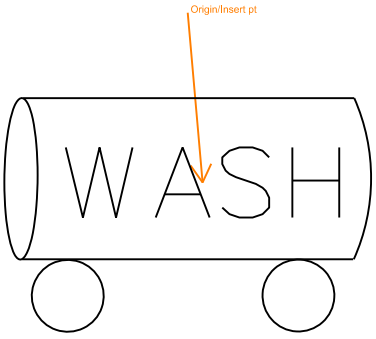
Hazardous Materials: EGDECN
EQUIPMENT DECON
Element type: Symbol



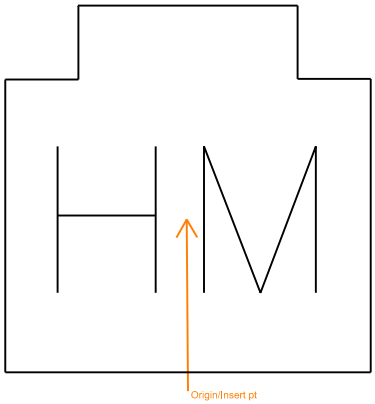
Hazardous Materials: EGONST
ONSITE COMMAND POST
Element type: Symbol



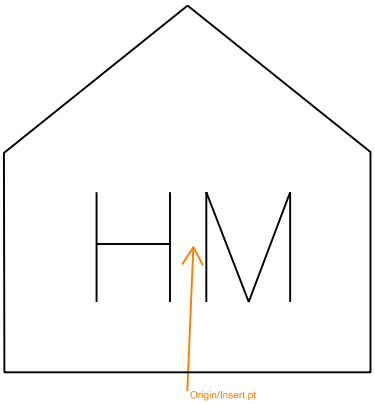
Hazardous Materials: EGSITE
SITE INFORMATION CENTER
Element type: Symbol



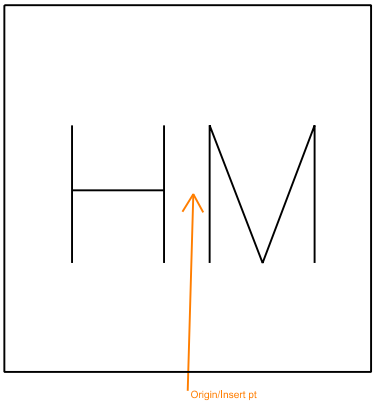
Hazardous Materials: EGWASH
WASHDOWN WATER TANK
Element type: Symbol



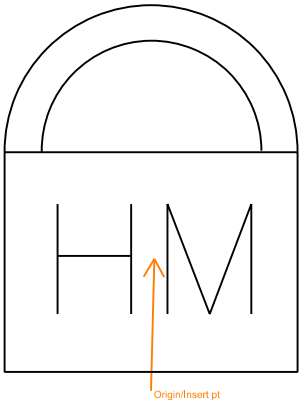
Hazardous Materials: EHZMSA
HAZMAT STOR LOCATION
Element type: Symbol



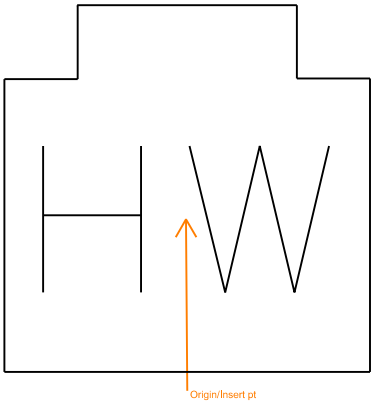
Hazardous Materials: EHZMSB
HAZMAT STOR BLDG
Element type: Symbol



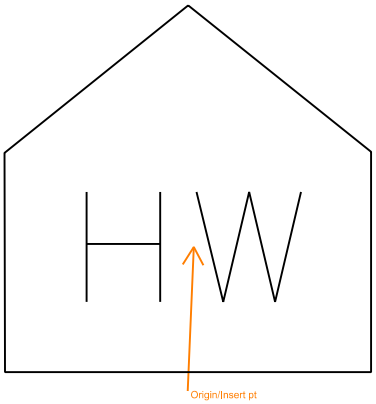
Hazardous Materials: EHZMSR
HAZMAT STORAGE ROOM
Element type: Symbol



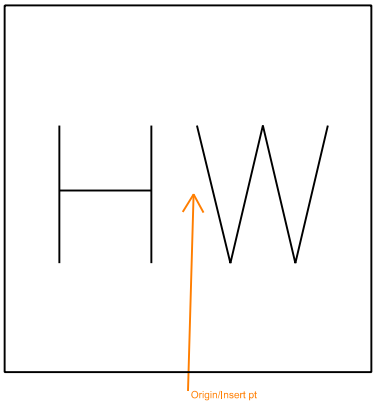
Hazardous Materials: EHZMSV
HAZMAT STOR VAULT
Element type: Symbol



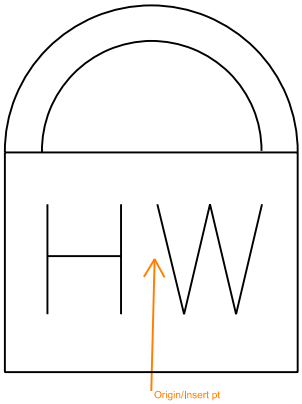
Hazardous Materials: EHZWSA
HAZWASTE STOR LOC
Element type: Symbol



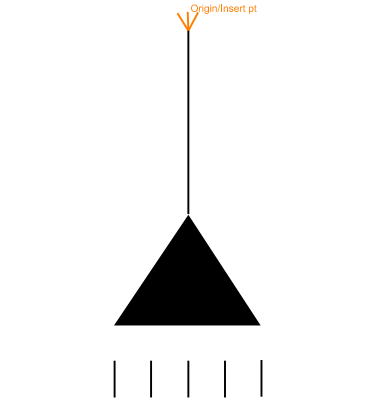
Hazardous Materials: EHZWSB
HAZWASTE STOR BLDG
Element type: Symbol



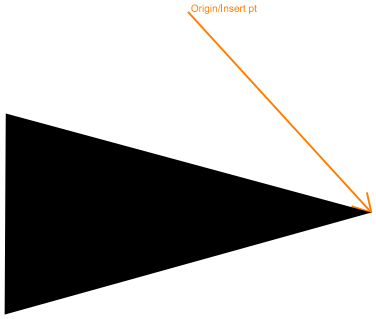
Hazardous Materials: EHZWSR
HAZWASTE STOR ROOM
Element type: Symbol



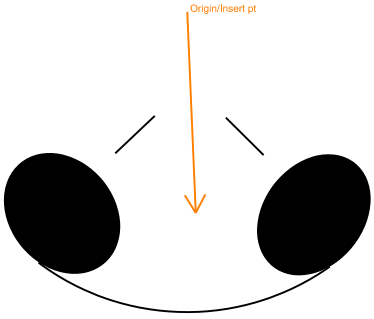
Hazardous Materials: EHZWSV
HAZWASTE STOR VAULT
Element type: Symbol



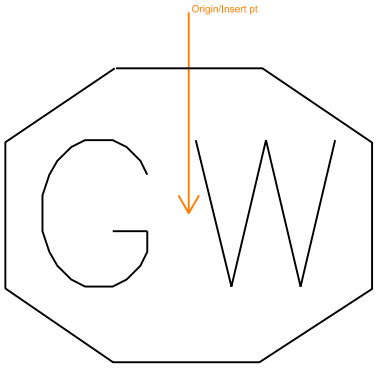
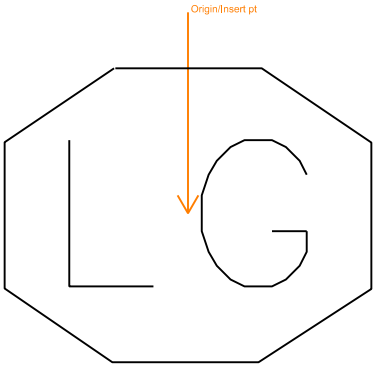
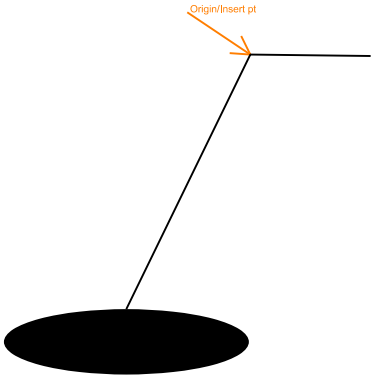
Hazardous Materials: EMGSHW
EMERGENCY SHOWER
Element type: Symbol



Hazardous Materials: EPOLLS
POLLUTION SOURCE SITE
Element type: Symbol



Hazardous Materials: EYEWAS
EMERGENCY EYEWASH
Element type: Symbol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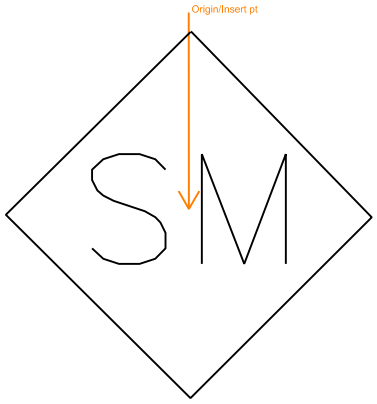	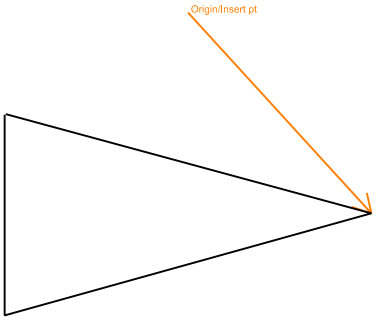	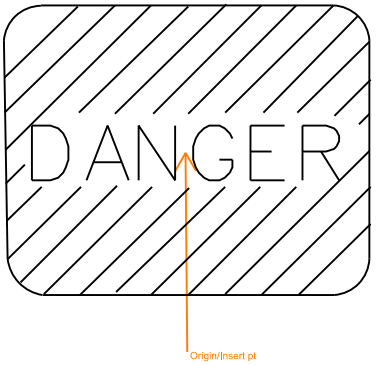
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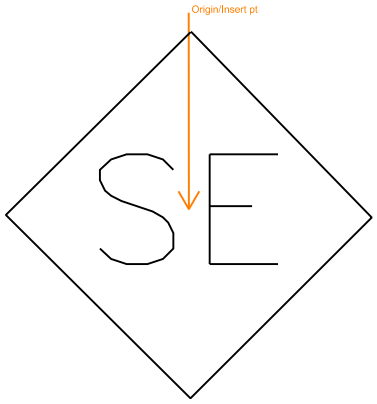	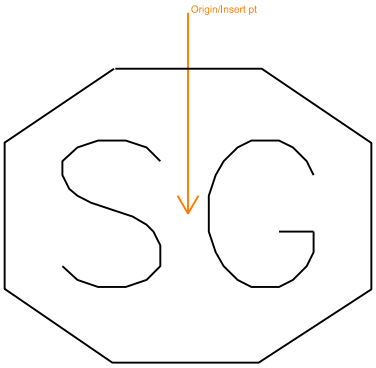	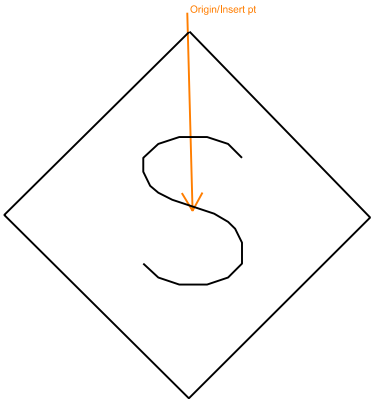
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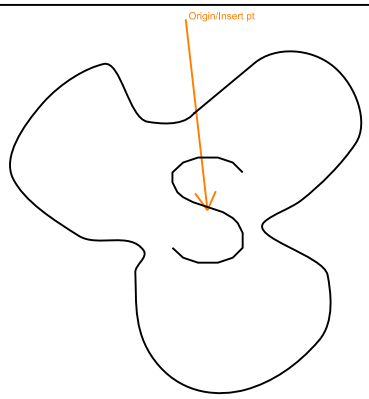	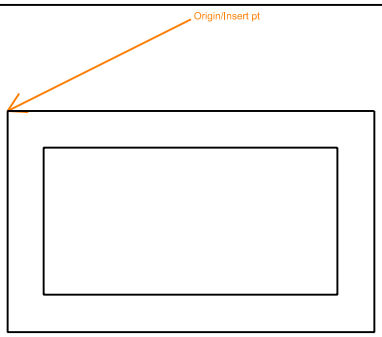	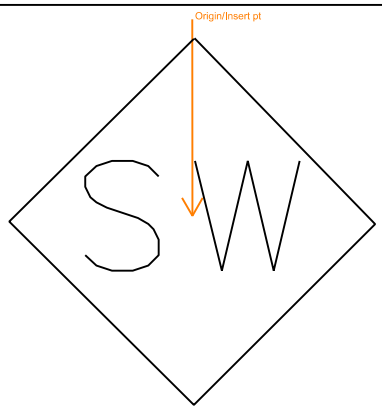
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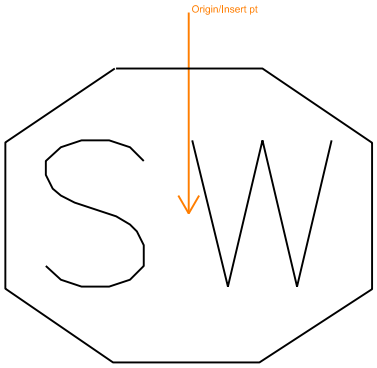
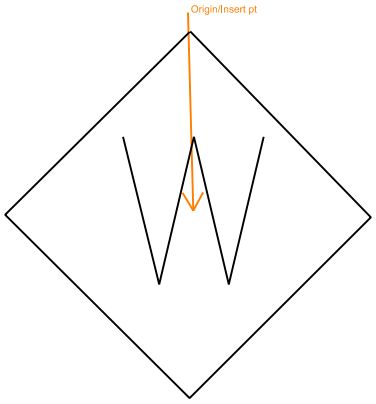
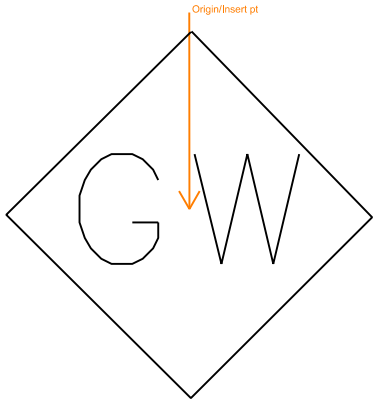
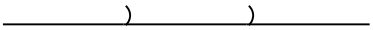
		
Hazardous Materials: SWTQST SURF WTR QUAL MON STATION Element type: Symbol	Hazardous Materials: WASSMP WASTE SAMPLE LOCATION Element type: Symbol	Hazardous Materials: WATSMP GROUNDWATER SAMPLE LOC Element type: Symbol

3 Survey/Mapping Lines Library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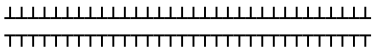
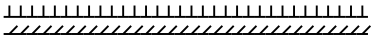
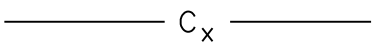
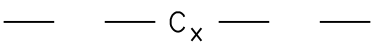
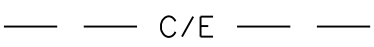
		
Survey/Mapping: BARDIT DITCH BARRIER Element type: Line	Survey/Mapping: BARDTB DITCH AND BEAM BARRIER Element type: Line	Survey/Mapping: BARGEN GENERIC SECURITY BARRIER Element type: Line
Survey/Mapping: BARMAS SECURITY MASONRY BARRIER Element type: Line	Survey/Mapping: CMP12 CMP 12IN DIAMETER Element type: Line	Survey/Mapping: CMPU12 CMPU 12IN DIAMETER Element type: Line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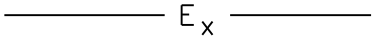
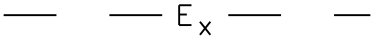
Survey/Mapping: CONLMT CONSTRUCTION LIMIT Element type: Line	Survey/Mapping: CULVRT CULVERT PIPE Element type: Line	Survey/Mapping: DITCH DITCH LINE Element type: Line
		
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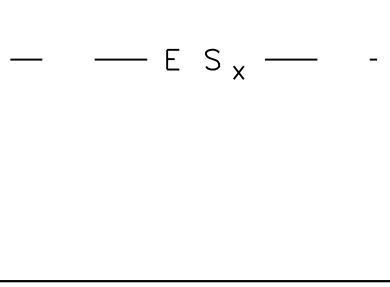	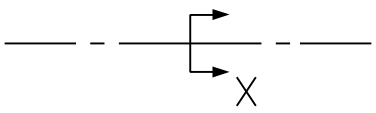	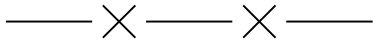
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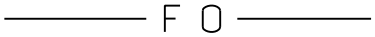
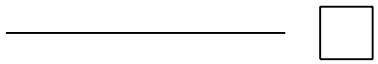
		
Survey/Mapping: FIBOPT FIBER OPTICS LINE Element type: Line	Survey/Mapping: FIRE FIRE PROTECTION WATR SUPPLY Element type: Line	Survey/Mapping: FUELOR FUEL OIL RETURN Element type: Line
		
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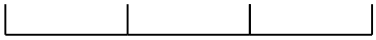		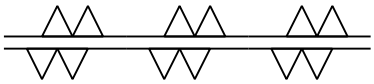
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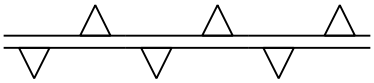
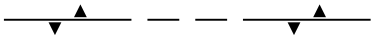
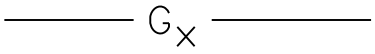
		
Survey/Mapping: LEVEE LEVEE NEW Element type: Line	Survey/Mapping: LEVEEX EXISTING LEVEE Element type: Line	Survey/Mapping: LEVERP LEVEE TO BE REPAIRED Element type: Line
Survey/Mapping: LIQPET LIQUID PETROLEUM GAS Element type: Line	Survey/Mapping: MINRDC MINOR DEPTH CONTOUR Element type: Line	Survey/Mapping: NONPOT NONPOTABLE WATER Element type: Line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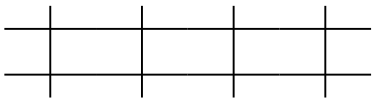
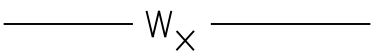
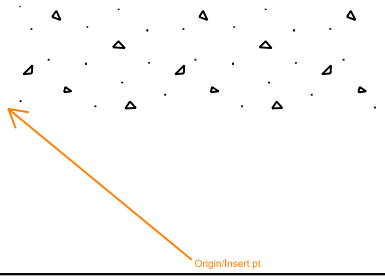
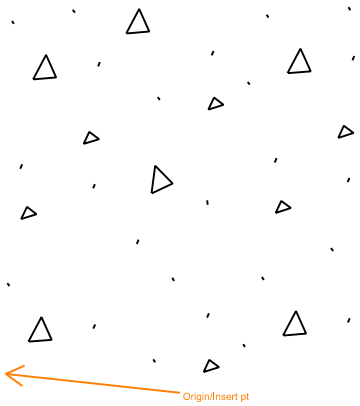
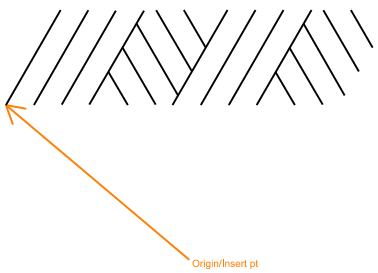
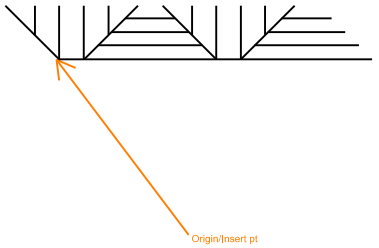
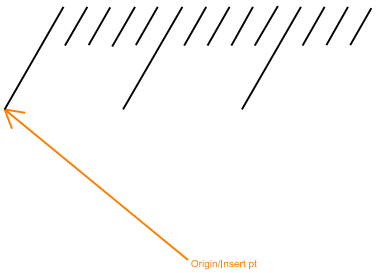
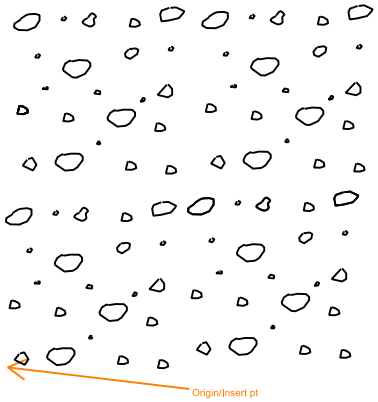
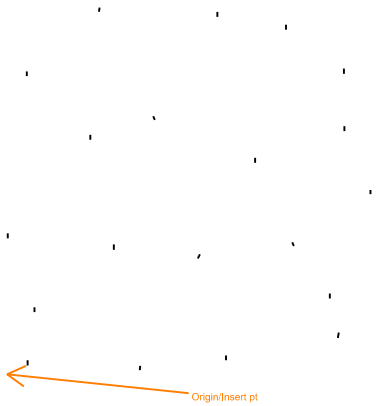
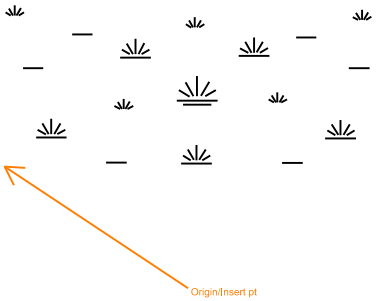
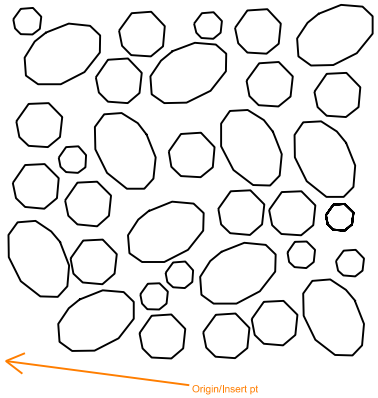
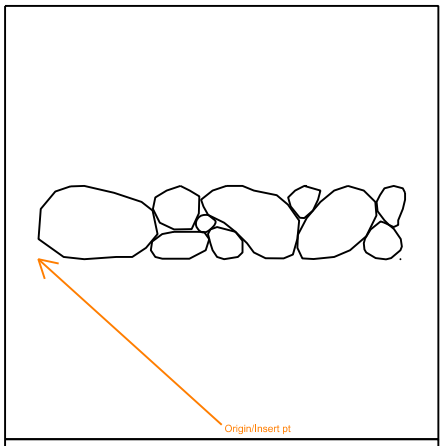
		
Survey/Mapping: RAILRD RAILROAD Element type: Line	Survey/Mapping: RTOFWY RIGHT OF WAY Element type: Line	Survey/Mapping: SILT SILT FENCE Element type: Line
Survey/Mapping: SSILT SUPER SILT FENCE Element type: Line	Survey/Mapping: SSWAFX EXISTING SANITARY SEWER Element type: Line	Survey/Mapping: STRAFX EXISTING STORM DRAIN Element type: Line

	
Survey/Mapping: TREEL TREE LINE Element type: Line	Survey/Mapping: WATRX EXISTING WATER LINE Element type: Line

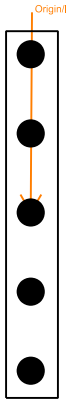
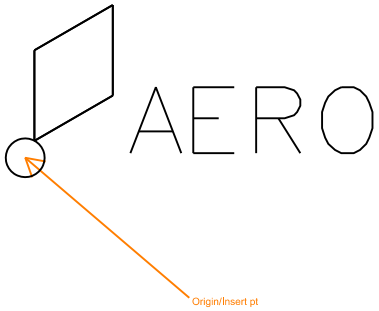
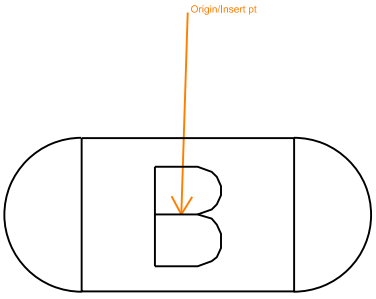
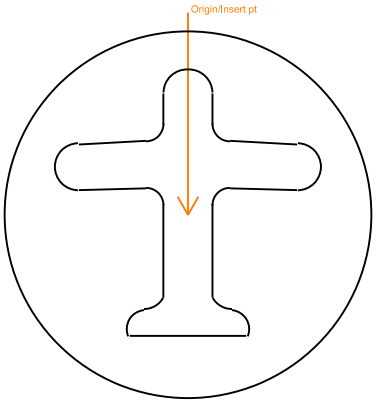
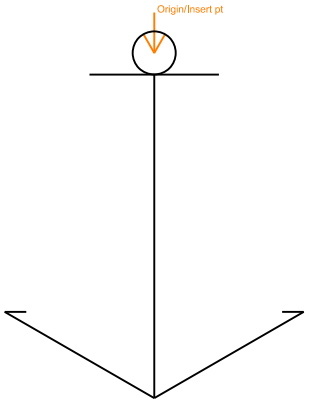
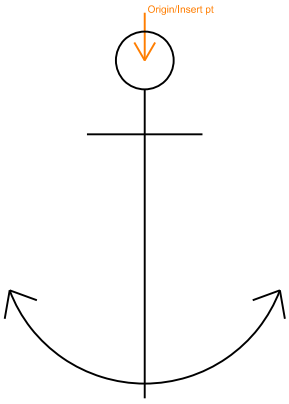
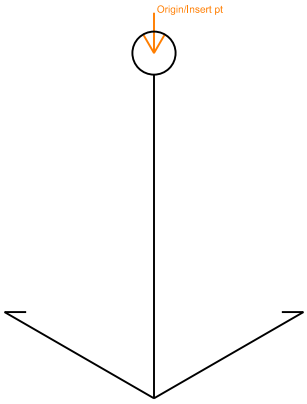
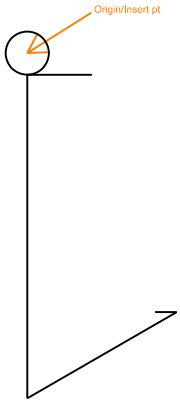
3 Survey/Mapping Patterns Library

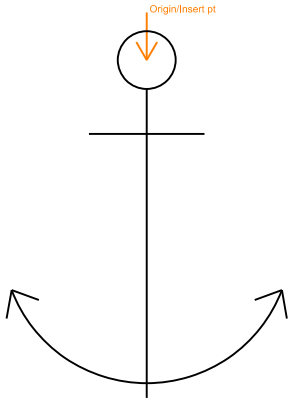
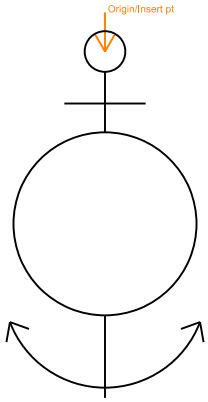
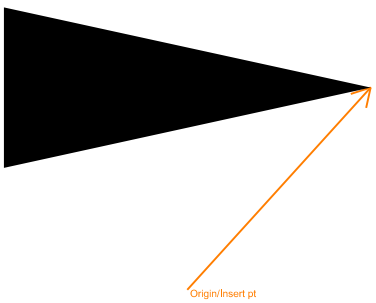
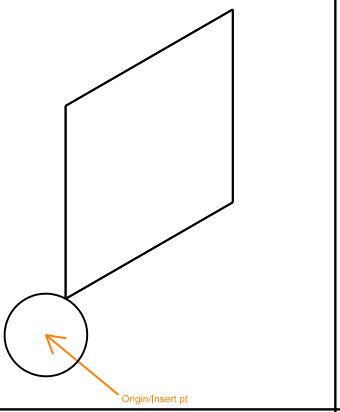
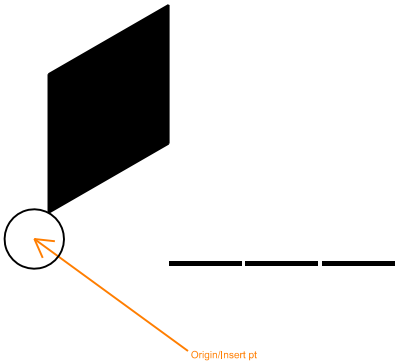
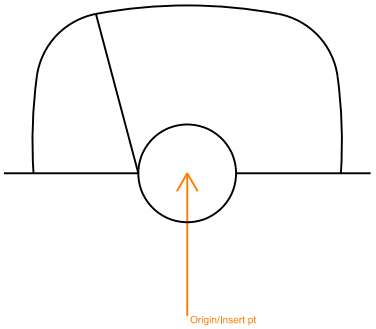
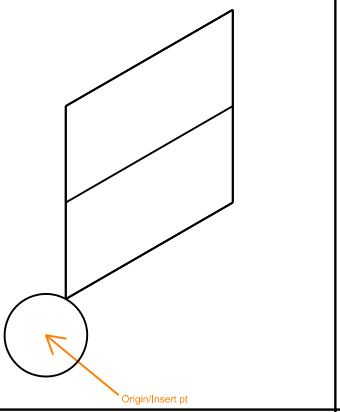
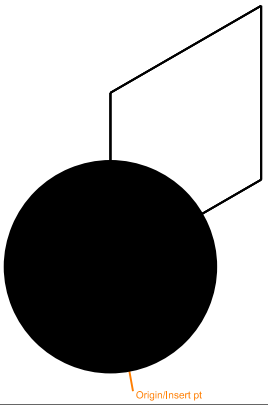
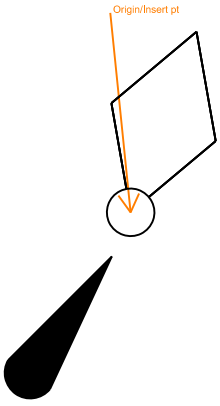
		
Survey/Mapping: CONC CONCRETE Element type: Pattern	Survey/Mapping: CONCST CONCRETE STONE Element type: Pattern	Survey/Mapping: EEARTH EXISTING EARTH Element type: Pattern
		
Survey/Mapping: EROCK EXISTING ROCK Element type: Pattern	Survey/Mapping: FILLSC FILL SECTION Element type: Pattern	Survey/Mapping: GRAVEL GRAVEL Element type: Pattern
		
Survey/Mapping: GROUT GROUT Element type: Pattern	Survey/Mapping: LSWAMP LARGE SWAMP Element type: Pattern	Survey/Mapping: POROUS POROUS Element type: Pattern

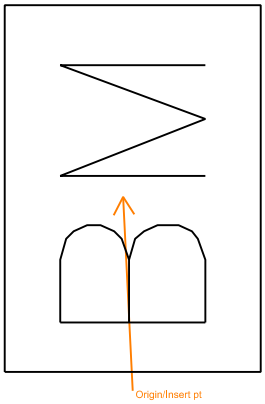


Survey/Mapping: RIPRAP
RIPRAP PATTERN
Element type: Pattern

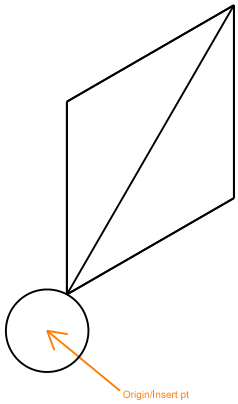
3 Survey/Mapping Symbols Library

		
Survey/Mapping: ACLLEL APPROACH LIGHTBAR_ELEVATED Element type: Symbol	Survey/Mapping: ACLLSF APPROACH LIGHTBAR_SEMIFLUSH Element type: Symbol	Survey/Mapping: AERO SEAPLANE ANCHORAGE BUOY Element type: Symbol
		
Survey/Mapping: AFBCN AIRFIELD BEACON Element type: Symbol	Survey/Mapping: AIRFLD AIRFIELD SYMBOL Element type: Symbol	Survey/Mapping: ANCHR1 ANCHORAGE LARGE VESSEL Element type: Symbol
		
Survey/Mapping: ANCHR2 ANCHORAGE LARGE VESSEL Element type: Symbol	Survey/Mapping: ANCHR3 ANCHORAGE SMALL VESSEL Element type: Symbol	Survey/Mapping: ANCHR4 ANCHORAGE SMALL VESSEL Element type: Symbol

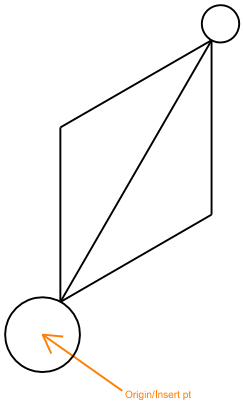
		
Survey/Mapping: ANCHR5 ANCHORAGE SMALL VESSEL Element type: Symbol	Survey/Mapping: ANCHRB ANCHOR BERTH Element type: Symbol	Survey/Mapping: ARROW ARROW TERMINATOR Element type: Symbol
		
Survey/Mapping: BAR1 BARREL BUOY Element type: Symbol	Survey/Mapping: BAR1C BARREL BUOY INDICATE COLOR Element type: Symbol	Survey/Mapping: BAR2 BARREL BUOY Element type: Symbol
		
Survey/Mapping: BARD DIAG STRIPE BARREL BUOY Element type: Symbol	Survey/Mapping: BARLT1 LIGHTED BARREL BUOY Element type: Symbol	Survey/Mapping: BARLT2 LIGHTED BARREL BUOY Element type: Symbol



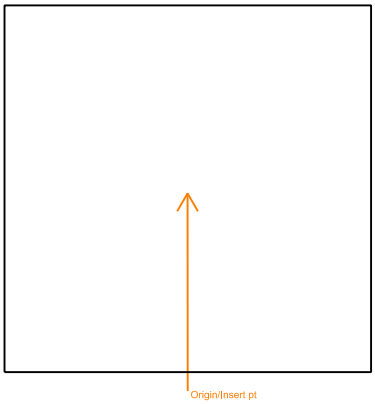
Survey/Mapping: BARMKR
BARRIER MARKER
Element type: Symbol



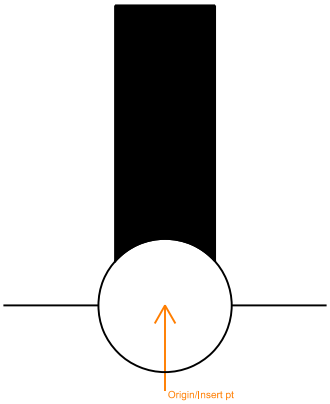
Survey/Mapping: BARV
VERT STRIPE BARREL BUOY
Element type: Symbol



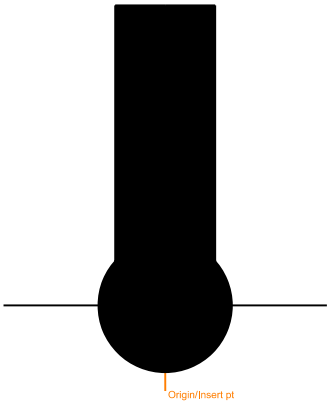
Survey/Mapping: BARVT
V STRP BARREL BUOY W TOPMK
Element type: Symbol



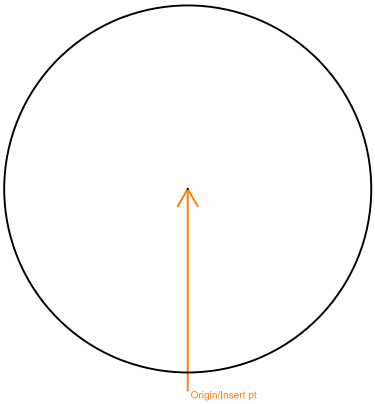
Survey/Mapping: BCN1
GENERAL BEACON
Element type: Symbol



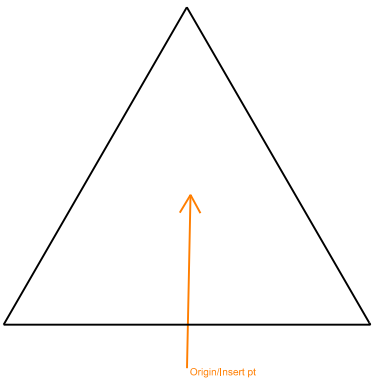
Survey/Mapping: BCN2
GENERAL BEACON
Element type: Symbol



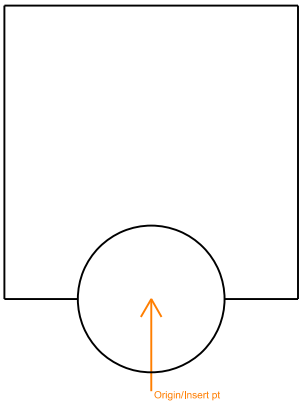
Survey/Mapping: BCN3
GENERAL BEACON
Element type: Symbol



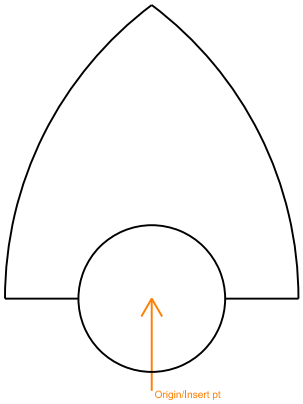
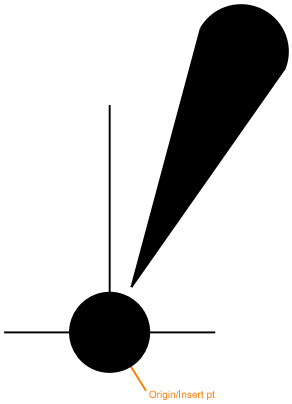
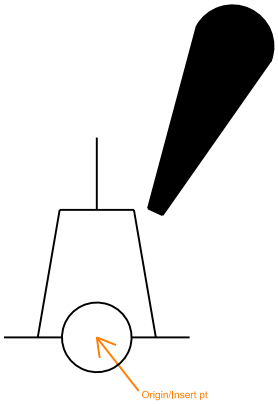
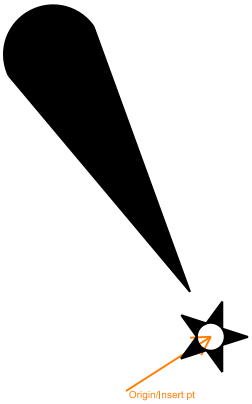
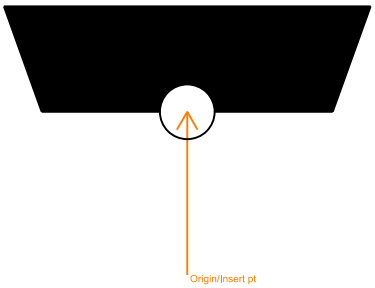
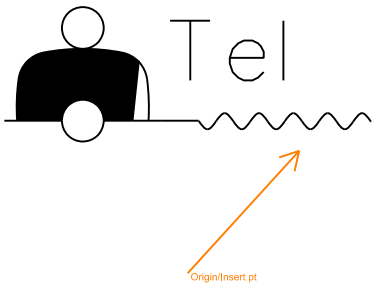
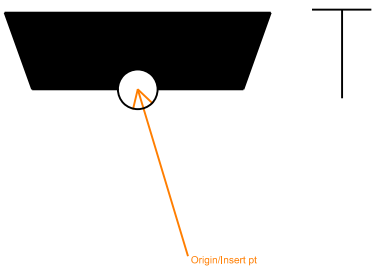
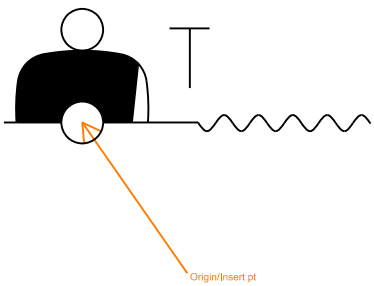
Survey/Mapping: BCN4
GENERAL BEACON
Element type: Symbol

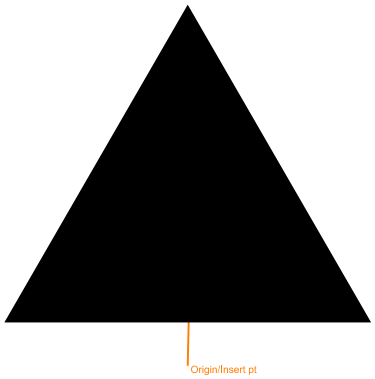


Survey/Mapping: BCN5
GENERAL BEACON
Element type: Symbol

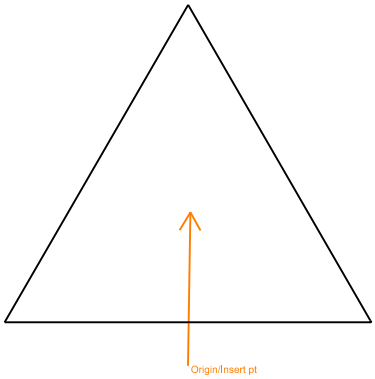


Survey/Mapping: BCNBY1
BUOYANT BEACON
Element type: Symbol

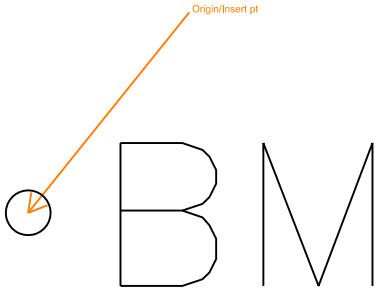
		
Survey/Mapping: BCNBY2 BUOYANT BEACON Element type: Symbol	Survey/Mapping: BCNLT1 LIGHTED BEACON Element type: Symbol	Survey/Mapping: BCNLT2 LIGHTED BEACON Element type: Symbol
		
Survey/Mapping: BCNLT3 LIGHTED BEACON Element type: Symbol	Survey/Mapping: BCNRES RESILIENT BEACON Element type: Symbol	Survey/Mapping: BCNTG1 TELEGRAPHIC MOORING BEACON Element type: Symbol
		
Survey/Mapping: BCNTG2 TELEGRAPHIC MOORING BEACON Element type: Symbol	Survey/Mapping: BCNTP1 TELEPHONIC MOORING BEACON Element type: Symbol	Survey/Mapping: BCNTP2 TELEPHONIC MOORING BEACON Element type: Symbol



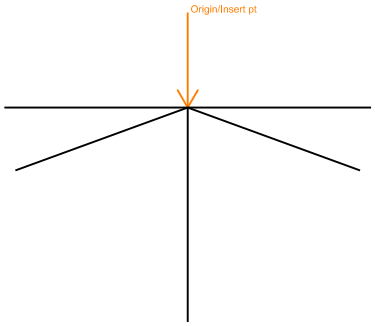
Survey/Mapping: BCNTR1
TRIANGULAR BEACON
Element type: Symbol



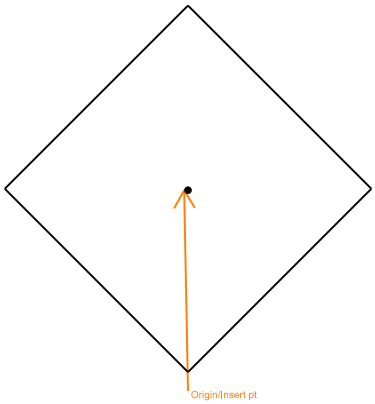
Survey/Mapping: BCNTR2
TRIANGULAR BEACON
Element type: Symbol



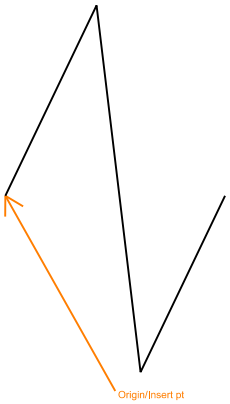
Survey/Mapping: BM
BENCH MARK
Element type: Symbol



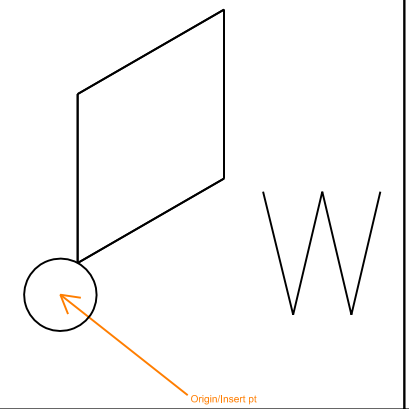
Survey/Mapping: BMALT
BENCH MARK ALTERNATE
Element type: Symbol



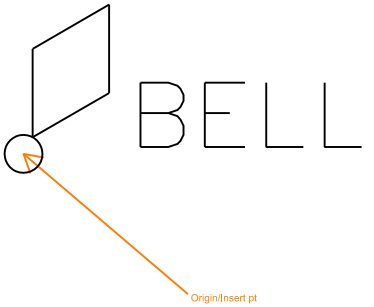
Survey/Mapping: BNDMRK
BOUNDARY MARK
Element type: Symbol



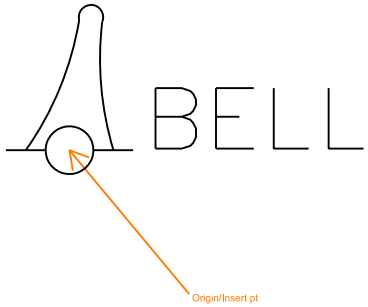
Survey/Mapping: BREAK
BREAK LINE SYMBOL
Element type: Symbol



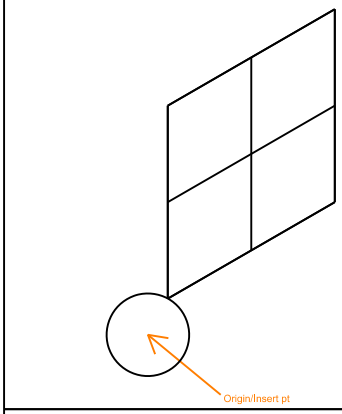
Survey/Mapping: BYANCH
ANCHORAGE BUOY
Element type: Symbol



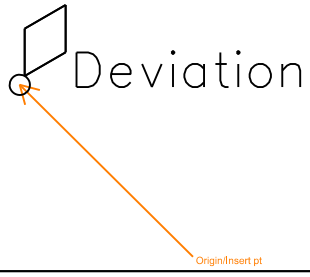
Survey/Mapping: BYBELB
BELL BARREL BUOY
Element type: Symbol



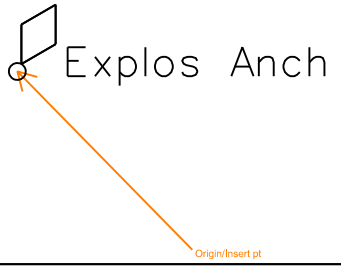
Survey/Mapping: BYBELP
BELL PILLAR BUOY
Element type: Symbol



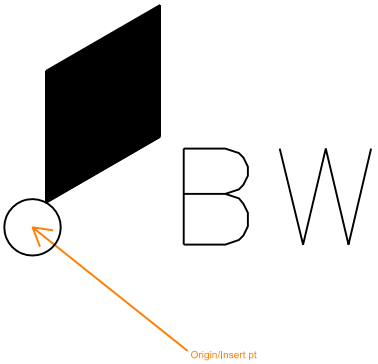
Survey/Mapping: BYCHEC
CHECKERED BUOY
Element type: Symbol



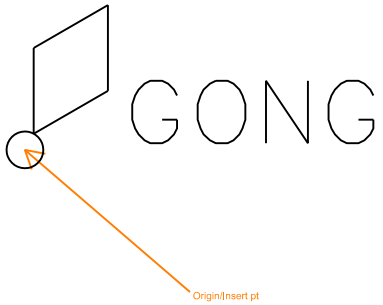
Survey/Mapping: BYCOMP
COMPASS ADJUSTMENT BUOY
Element type: Symbol



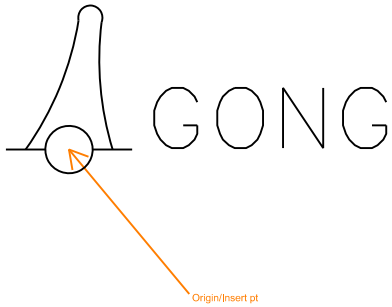
Survey/Mapping: BYEXPL
EXPLOSIVE ANCHORAGE BUOY
Element type: Symbol



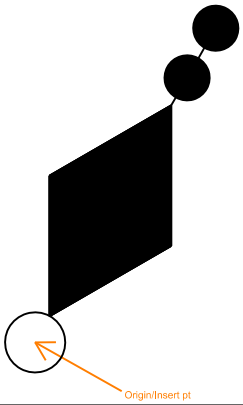
Survey/Mapping: BYFISH
FISH TRAP BUOY
Element type: Symbol



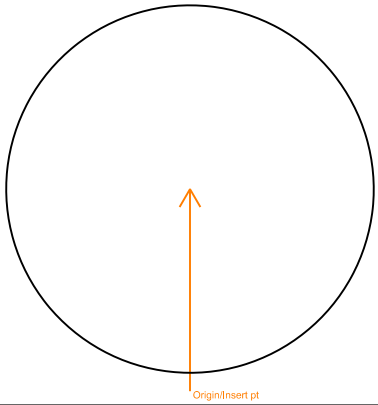
Survey/Mapping: BYGONB
GONG BARREL BUOY
Element type: Symbol



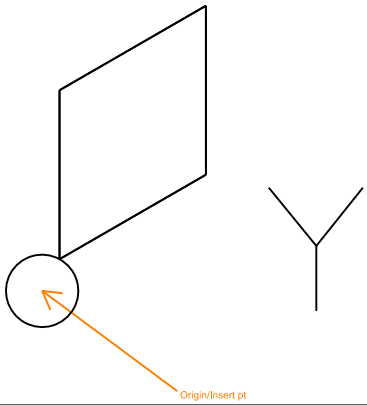
Survey/Mapping: BYGONP
GONG PILLAR BUOY
Element type: Symbol



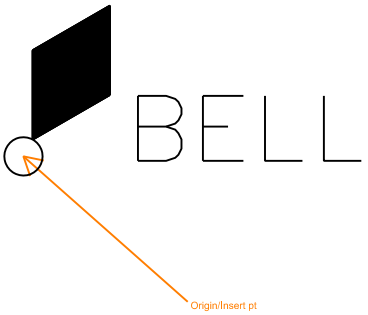
Survey/Mapping: BYJUNC
JUNCTION BUOY
Element type: Symbol



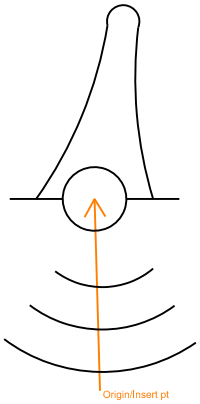
Survey/Mapping: BYPOS
POSITION OF BUOY
Element type: Symbol



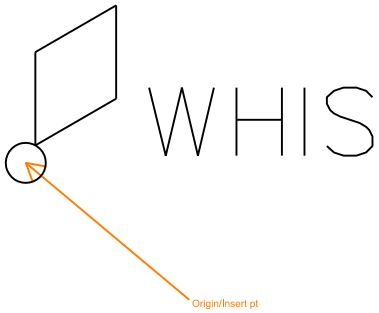
Survey/Mapping: BYQUAR
QUARANTINE BUOY
Element type: Symbol



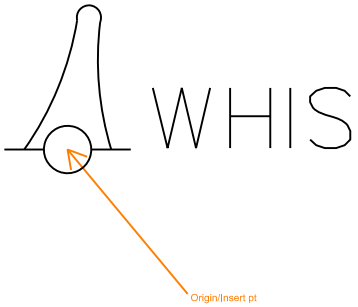
Survey/Mapping: BYWAV1
WAVE ACTUATED BELL BUOY
Element type: Symbol



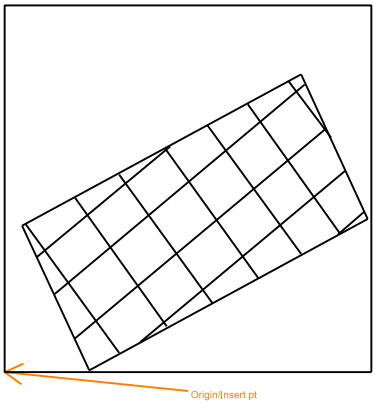
Survey/Mapping: BYWAV2
WAVE ACTUATED BELL BUOY
Element type: Symbol



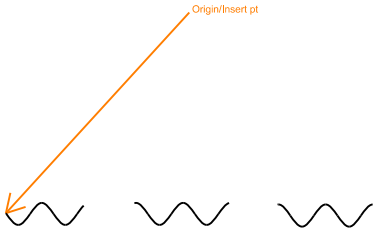
Survey/Mapping: BYWHIB
WHISTLE BARREL BUOY
Element type: Symbol



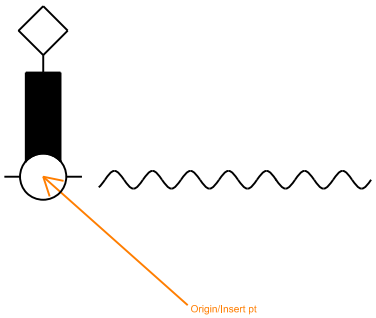
Survey/Mapping: BYWHIP
WHISTLE PILLAR BUOY
Element type: Symbol



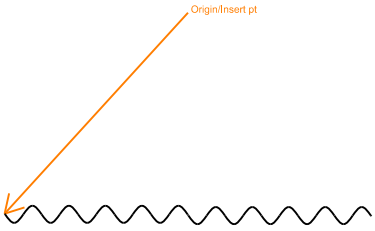
Survey/Mapping: CABCNZ
CABLE CROSSING ZONE
Element type: Symbol



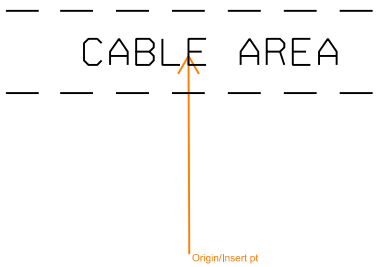
Survey/Mapping: CABDIS
DISUSED SUBMARINE CABLE
Element type: Symbol



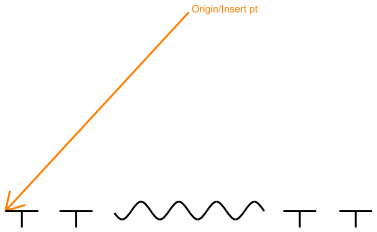
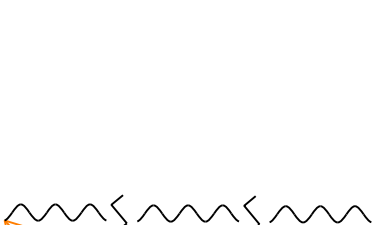
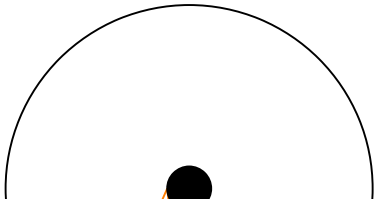
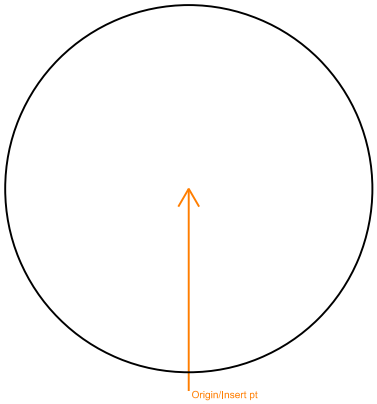
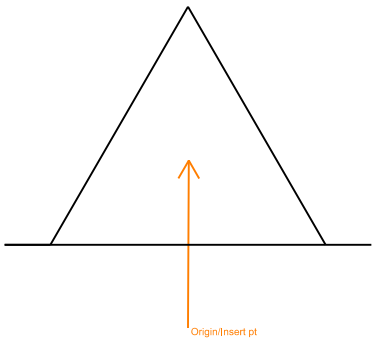
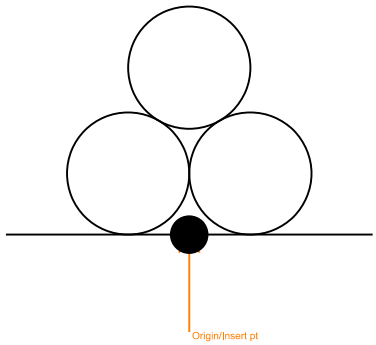
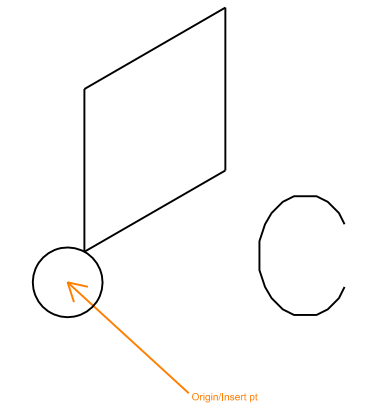
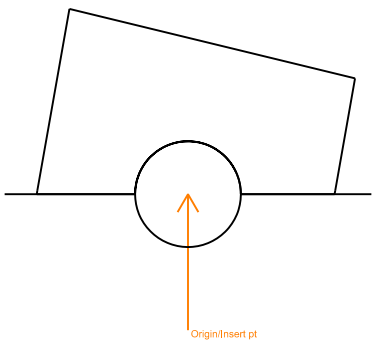
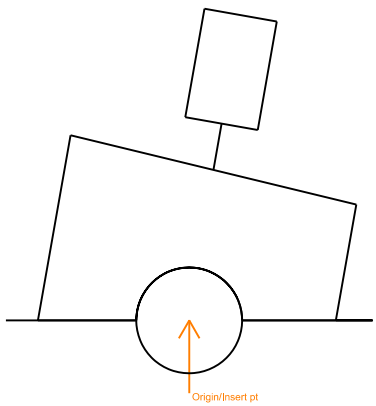
Survey/Mapping: CABLAN
CABLE LANDING BEACON
Element type: Symbol

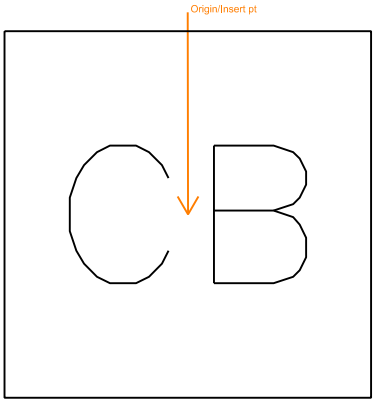


Survey/Mapping: CABLE
SUBMARINE CABLE
Element type: Symbol

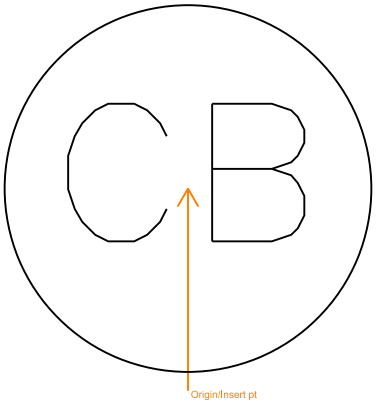


Survey/Mapping: CABLE1
SUBMARINE CABLE AREA
Element type: Symbol

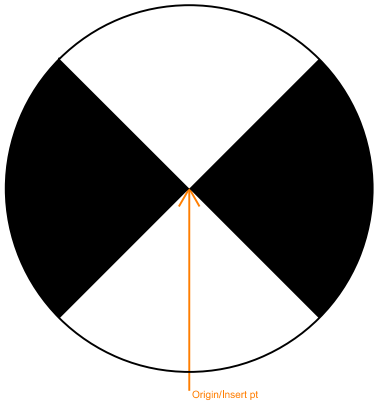
		
Survey/Mapping: CABLE2 SUBMARINE CABLE AREA Element type: Symbol	Survey/Mapping: CABPWR SUBMARINE POWER CABLE Element type: Symbol	Survey/Mapping: CAIRN1 CAIRN Element type: Symbol
		
Survey/Mapping: CAIRN2 CAIRN Element type: Symbol	Survey/Mapping: CAIRN3 CAIRN Element type: Symbol	Survey/Mapping: CAIRN4 CAIRN Element type: Symbol
		
Survey/Mapping: CAN1 CAN BUOY Element type: Symbol	Survey/Mapping: CAN2 CAN BUOY Element type: Symbol	Survey/Mapping: CANWT WHITE CAN BUOY W TOPMARK Element type: Symbol



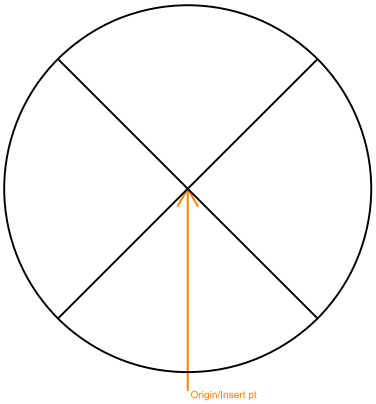
Survey/Mapping: CATBSN
CATCH BASIN
Element type: Symbol



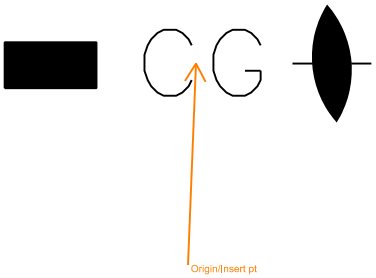
Survey/Mapping: CATBSR
ROUND CATCH BASIN
Element type: Symbol



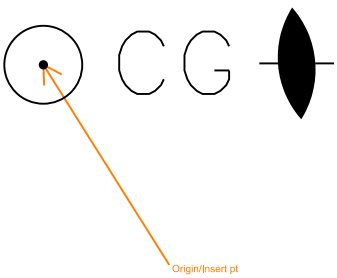
Survey/Mapping: CDHDR
CORE DRILL HOLE DRILLED
Element type: Symbol



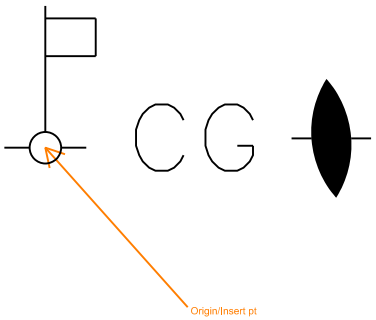
Survey/Mapping: CDHUDR
CORE DRILL HOLE UNDRILLED
Element type: Symbol



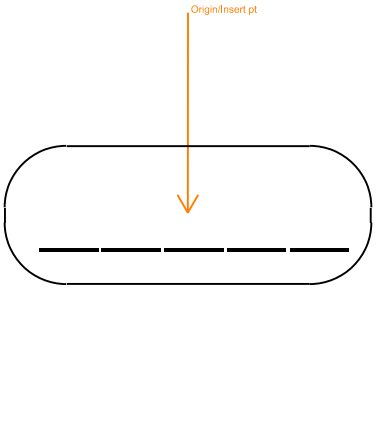
Survey/Mapping: CGRES1
COAST GUARD RESCUE STA
Element type: Symbol



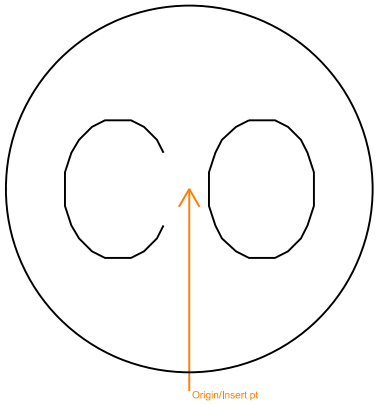
Survey/Mapping: CGRES2
COAST GUARD RESCUE STA
Element type: Symbol



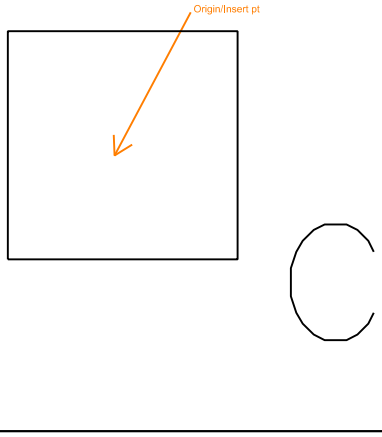
Survey/Mapping: CGRES3
COAST GUARD RESCUE STA
Element type: Symbol



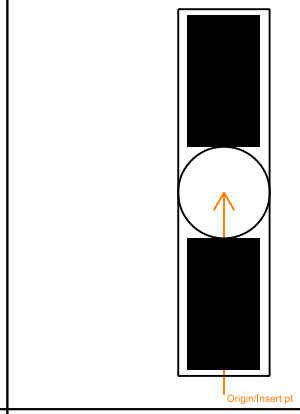
Survey/Mapping: CKTID
CIRCUIT ID SYMBOL
Element type: Symbol



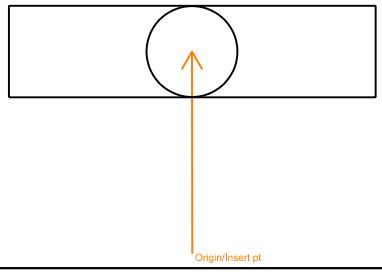
Survey/Mapping: CLNOUT
CLEANOUT
Element type: Symbol



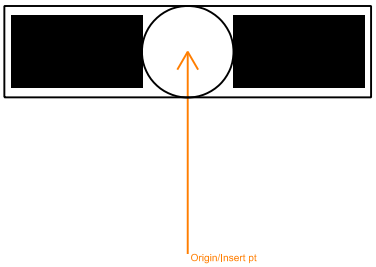
Survey/Mapping: CMHLX
COMMO MANHOLE_EXIST
Element type: Symbol



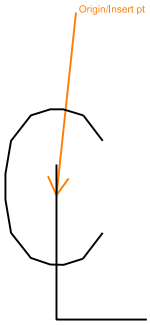
Survey/Mapping: CNR90
CORNER SOLID 90
Element type: Symbol



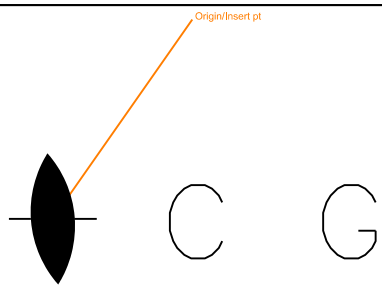
Survey/Mapping: CNRNF
CORNER NOT FOUND
Element type: Symbol



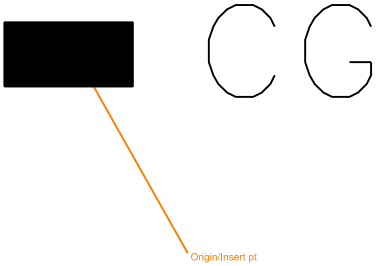
Survey/Mapping: CNRSF
CORNER SOLID FLAT
Element type: Symbol



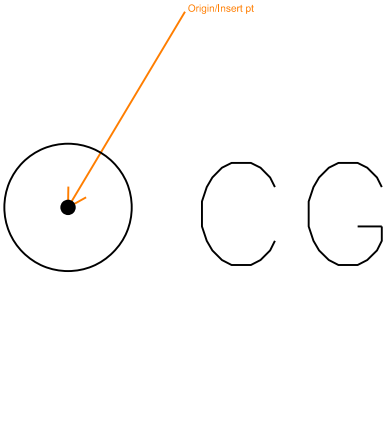
Survey/Mapping: CNTLIN
CENTERLINE SYMBOL
Element type: Symbol



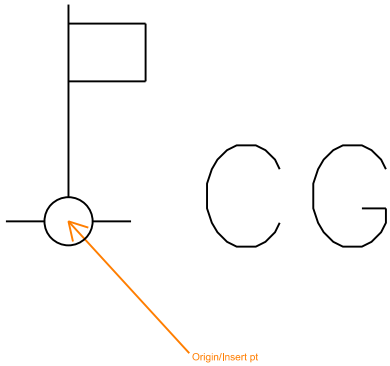
Survey/Mapping: COAST1
COAST GUARD STATION
Element type: Symbol



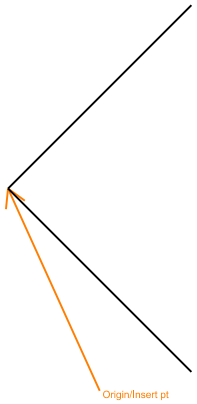
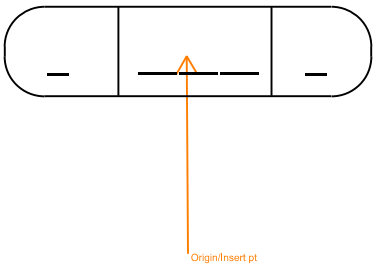
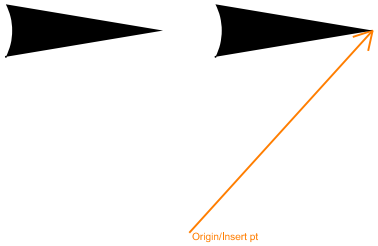
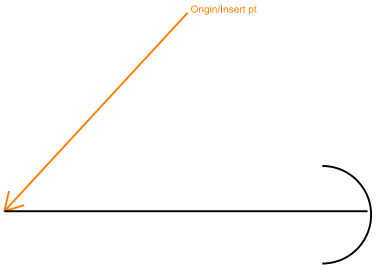
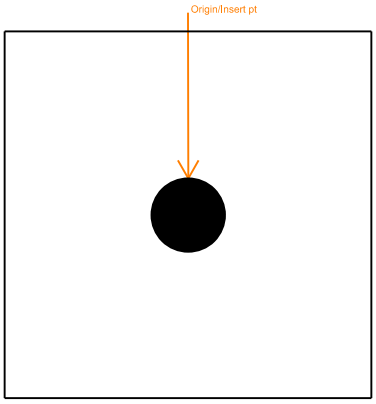
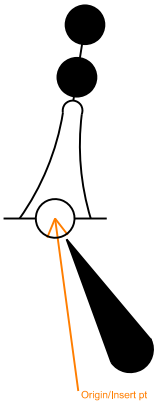
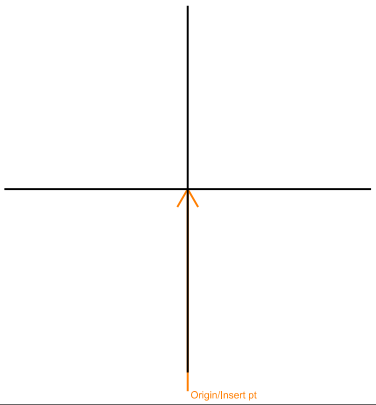
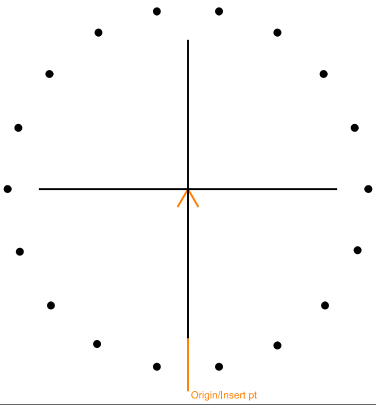
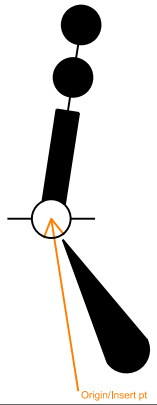
Survey/Mapping: COAST2
COAST GUARD STATION
Element type: Symbol

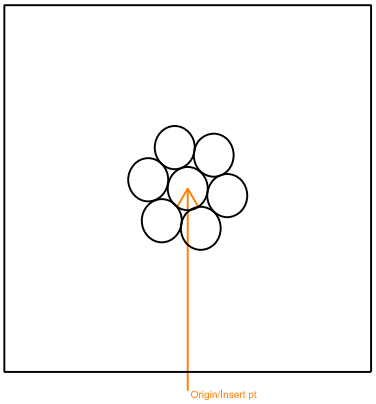


Survey/Mapping: COAST3
COAST GUARD STATION
Element type: Symbol

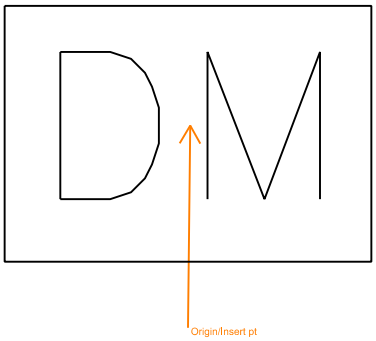


Survey/Mapping: COAST4
COAST GUARD STATION
Element type: Symbol

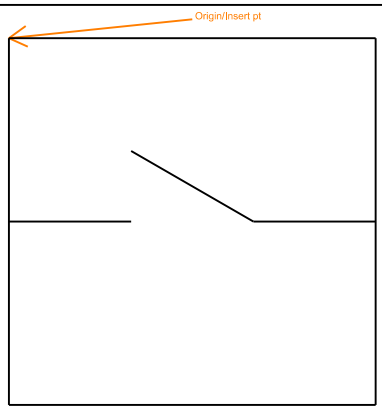
		
Survey/Mapping: CULVEE CULVERT END SYMBOL Element type: Symbol	Survey/Mapping: DBID DUCTBANK ID SYMBOL Element type: Symbol	Survey/Mapping: DBLARR DOUBLE ARROW TERMINATOR Element type: Symbol
		
Survey/Mapping: DGUYX DOWNGUY_EXISTING Element type: Symbol	Survey/Mapping: DISPLT DISUSED PLATFORM Element type: Symbol	Survey/Mapping: DNGPB LIGHTED DANGER BUOY PILLAR Element type: Symbol
		
Survey/Mapping: DNGRK DANGER U W ROCK DEPTH UNKNW Element type: Symbol	Survey/Mapping: DNGRK1 DANGER U W ROCK DEPTH UNKWN Element type: Symbol	Survey/Mapping: DNGSB LIGHTED DANGER BUOY SPAR Element type: Symbol



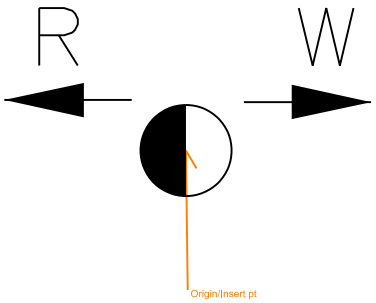
Survey/Mapping: DOLPHN
DOLPHIN
Element type: Symbol



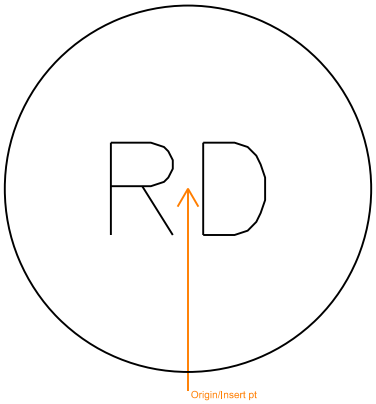
Survey/Mapping: DSTMKR
RW DISTANCE MARKER
Element type: Symbol



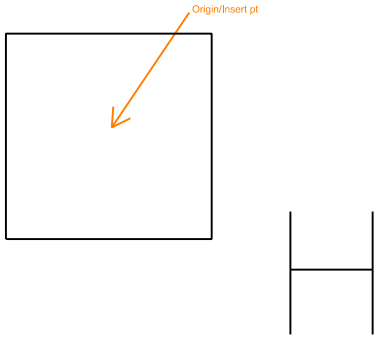
Survey/Mapping: DSWTCH
DIST SWITCH SWITCHING STAT
Element type: Symbol



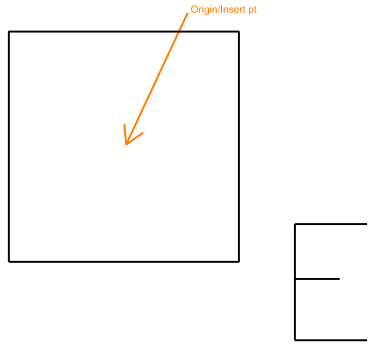
Survey/Mapping: DTHL
DISPLACE THRESHOLD LIGHT
Element type: Symbol



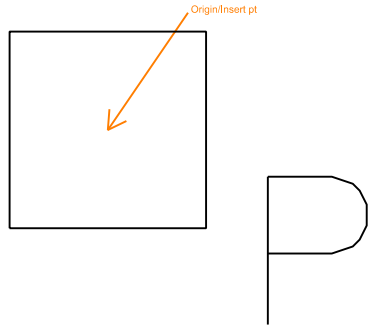
Survey/Mapping: ECRD
ROCK DAM SEDIMENT TRAP
Element type: Symbol



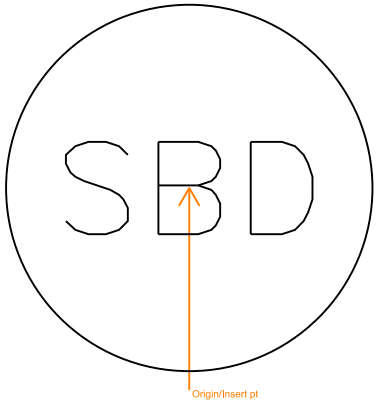
Survey/Mapping: EHHLX
ELEC HANDHOLE_EXIST
Element type: Symbol



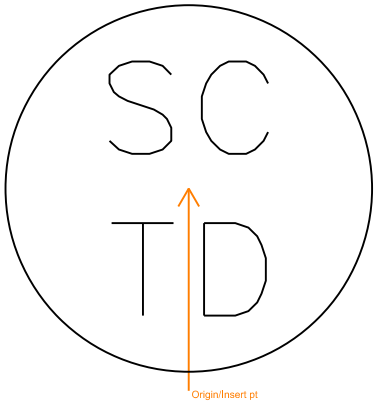
Survey/Mapping: EMHLX
ELEC MANHOLE_EXIST
Element type: Symbol



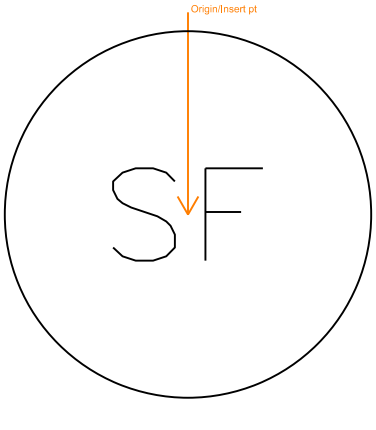
Survey/Mapping: EPBXX
ELEC PULLBOX_EXIST
Element type: Symbol



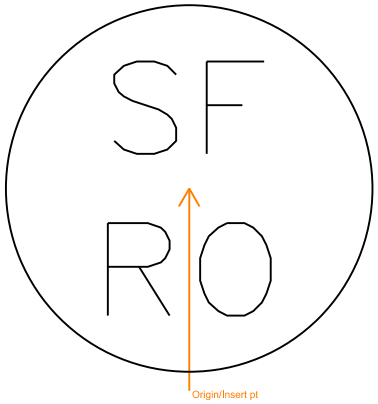
Survey/Mapping: ERSBD
STRAW BALE DAM
Element type: Symbol



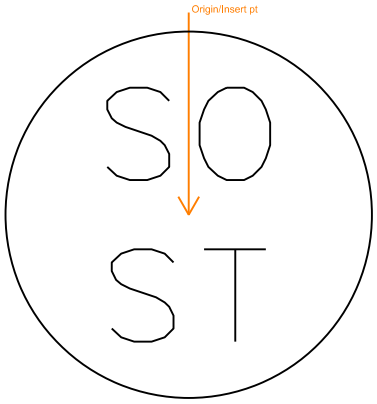
Survey/Mapping: ERSCTD
SEDIMENT CTRL TMPRY DIVRSION
Element type: Symbol



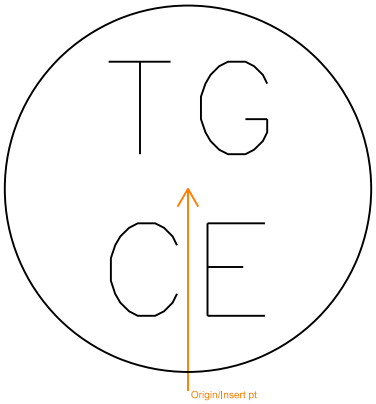
Survey/Mapping: ERSF
SILT FENCE
Element type: Symbol



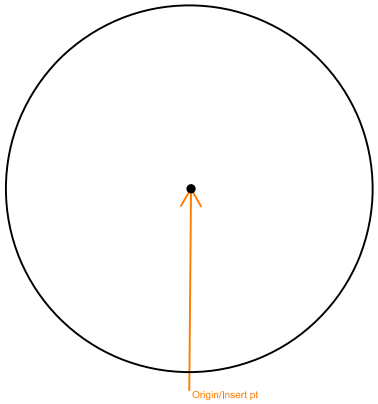
Survey/Mapping: ERSFRO
SILT FENCE ROCK OVERFLOW
Element type: Symbol



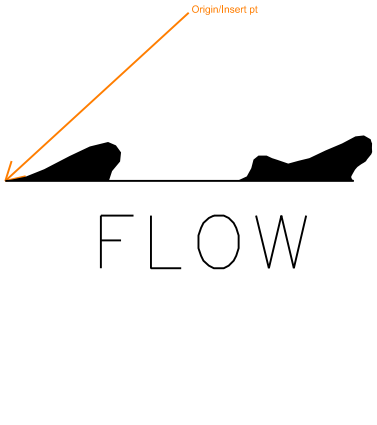
Survey/Mapping: ERSOST
STONE OUTLET SEDIMENT TRAP
Element type: Symbol



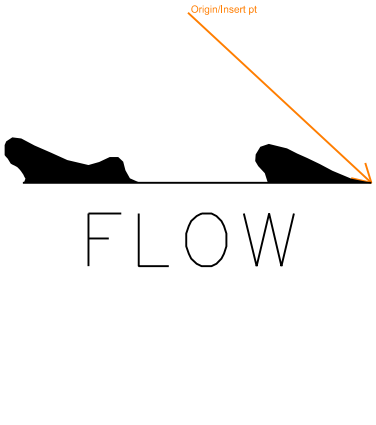
Survey/Mapping: ERTGCE
CONSTRUCTION ENTRANCE EXIT
Element type: Symbol



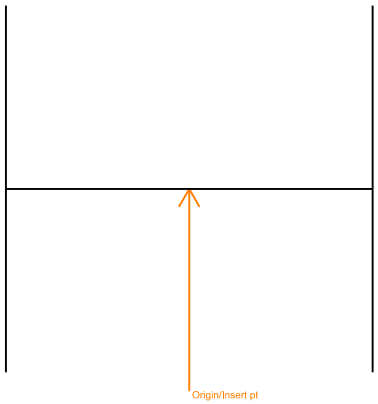
Survey/Mapping: FIXPNT
FIXED POINT
Element type: Symbol



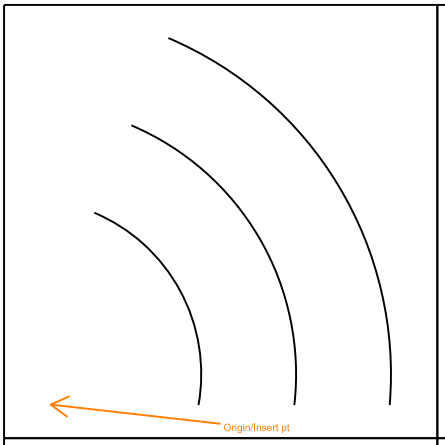
Survey/Mapping: FLARRL
FLOW ARROW LEFT IN 0 POINT
Element type: Symbol



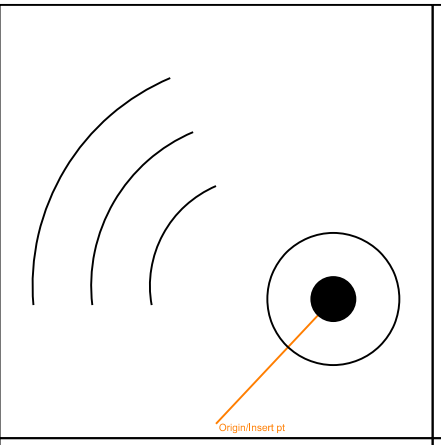
Survey/Mapping: FLARRR
FLOW ARROW RIGHT IN 0 POINT
Element type: Symbol



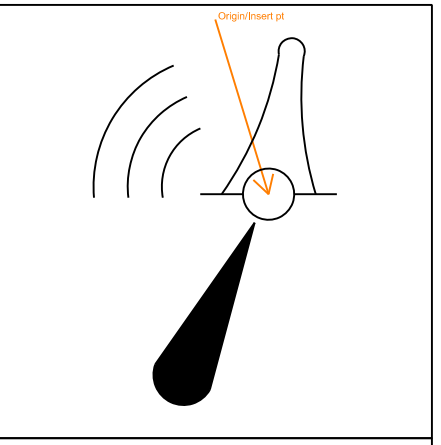
Survey/Mapping: FLDGAT
FLOOD GATE
Element type: Symbol



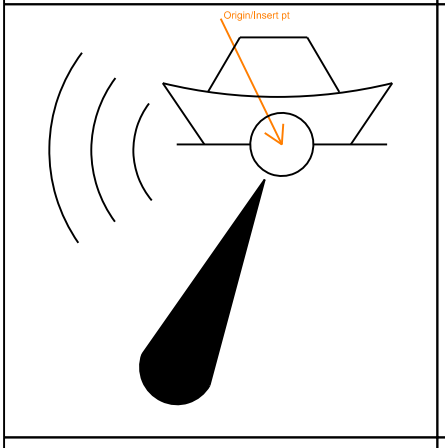
Survey/Mapping: FOG
FOG SIGNAL
Element type: Symbol



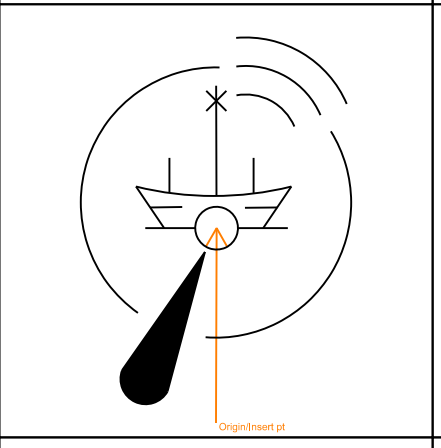
Survey/Mapping: FOGBCN
FOG SIGNAL BEACON
Element type: Symbol



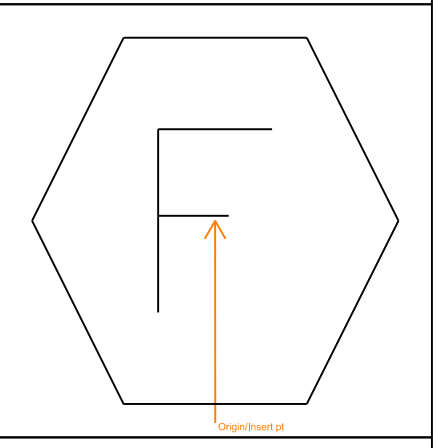
Survey/Mapping: FOGBY
FOG SIGNAL BUOY
Element type: Symbol



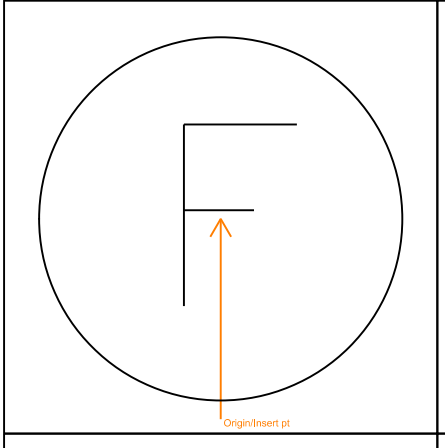
Survey/Mapping: FOGLS
FOG SIGNAL LIGHT SHIP
Element type: Symbol



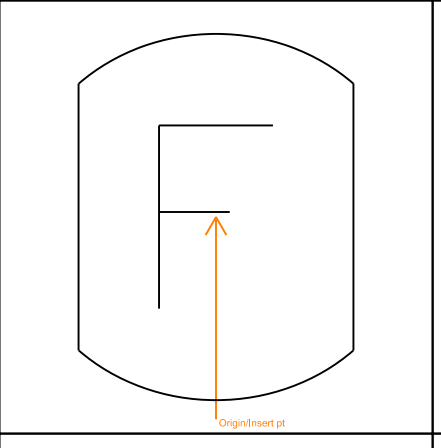
Survey/Mapping: FOGLSM
FOG SIG LIGHT SHIP MANNED
Element type: Symbol



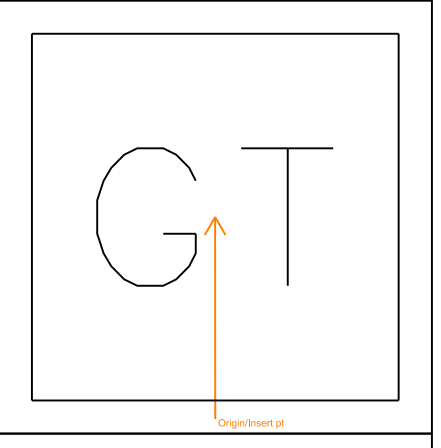
Survey/Mapping: FOMETR
FUEL OIL METER
Element type: Symbol



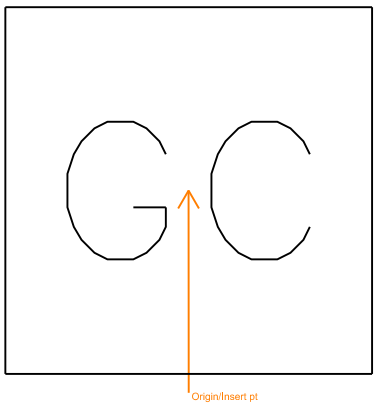
Survey/Mapping: FOMHOL
FUEL OIL MANHOLE
Element type: Symbol



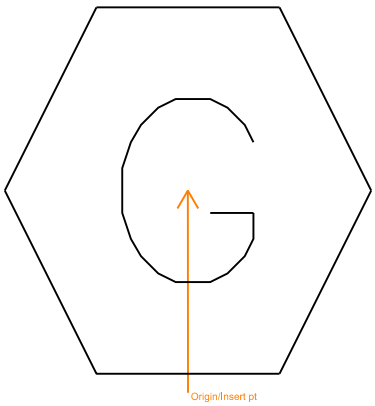
Survey/Mapping: FOVALT
FUEL OIL VAULT
Element type: Symbol



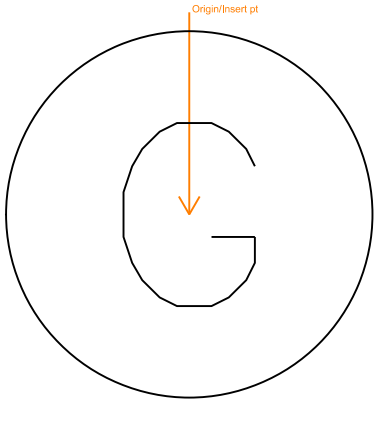
Survey/Mapping: GREASE
GREASE TRAP
Element type: Symbol



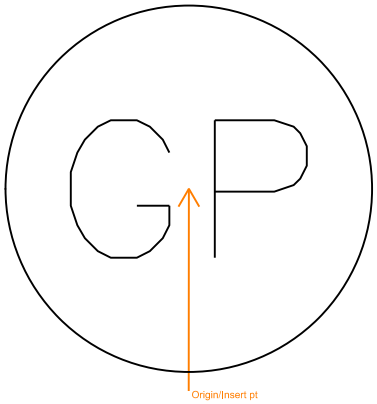
Survey/Mapping: GRITCH
GRIT CHAMBER
Element type: Symbol



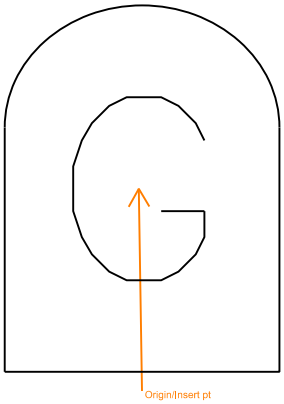
Survey/Mapping: GSMETR
GAS METER
Element type: Symbol



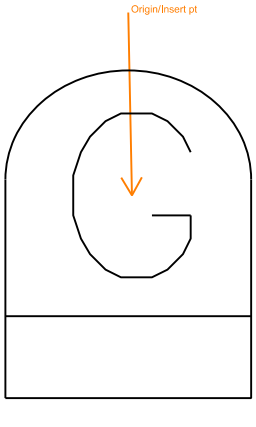
Survey/Mapping: GSMHOL
GAS MANHOLE
Element type: Symbol



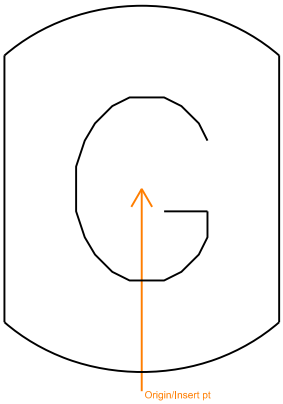
Survey/Mapping: GSPLNT
GAS PLANT
Element type: Symbol



Survey/Mapping: GSRECR
GAS RECEIVER
Element type: Symbol

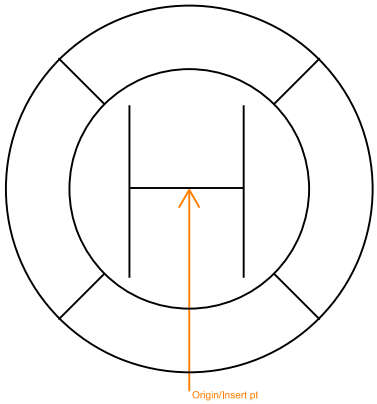


Survey/Mapping: GSTRAP
GAS TRAP
Element type: Symbol

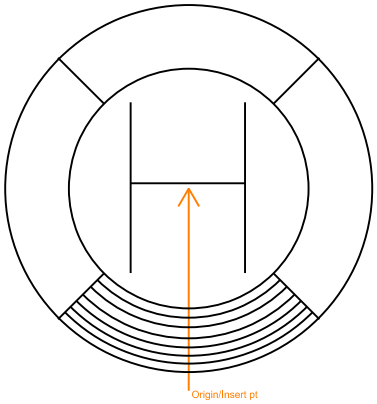


Survey/Mapping: GSVALT
GAS VALVE VAULT
Element type: Symbol

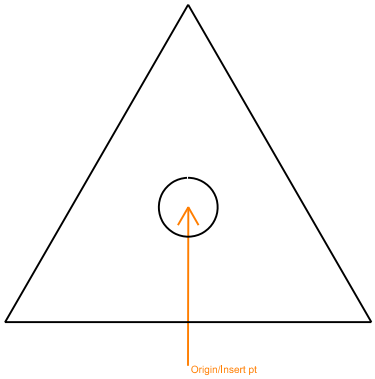
Survey/Mapping: HEADWL
HEADWALL
Element type: Symbol



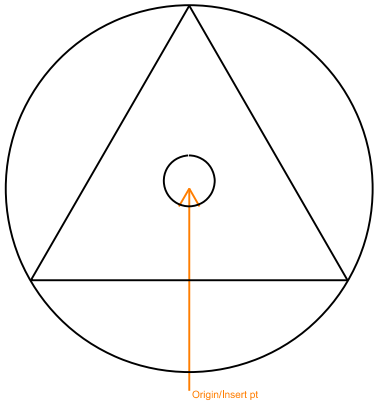
Survey/Mapping: HLL
HOVERLANE
Element type: Symbol



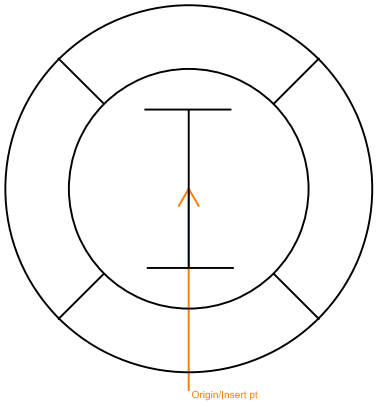
Survey/Mapping: HLLL
HOVERLANE LIMIT LIGHT
Element type: Symbol



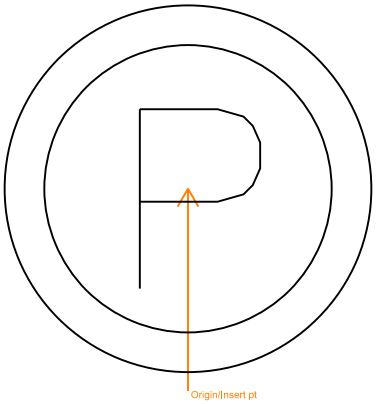
Survey/Mapping: HORCPT
HORIZONTAL CONTROL PT
Element type: Symbol



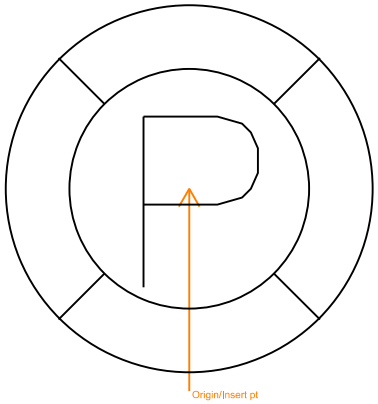
Survey/Mapping: HOVCPT
HORIZ VERT CONTROL PT
Element type: Symbol



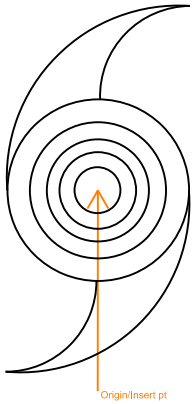
Survey/Mapping: HPIL
HELIPAD INSET LIGHT
Element type: Symbol



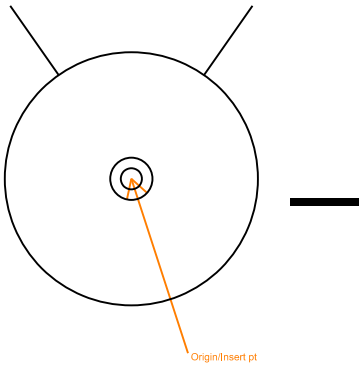
Survey/Mapping: HPPLEL
HELIPAD PER LIGHT_ELEVATED
Element type: Symbol



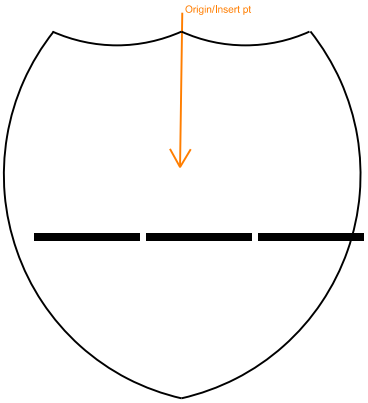
Survey/Mapping: HPPLSF
HELIPAD PERLIGHT_SEMIFLUSH
Element type: Symbol



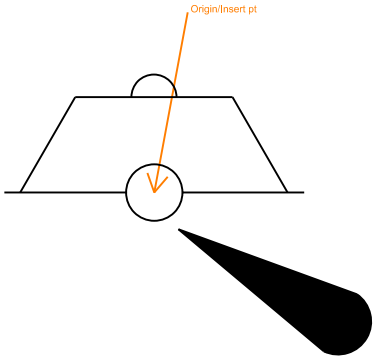
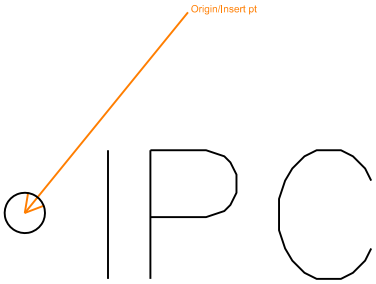
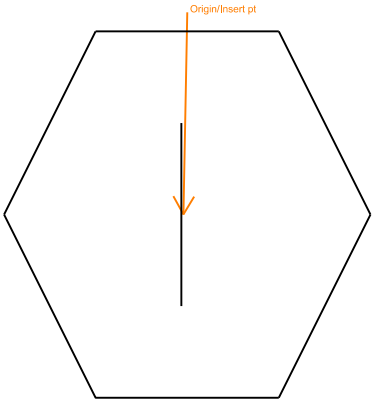
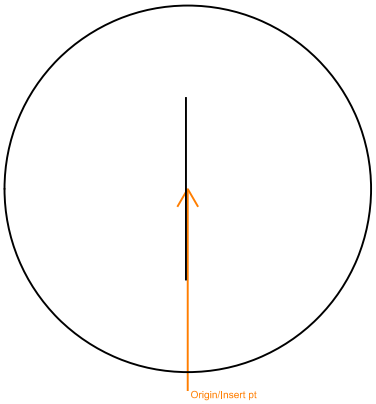
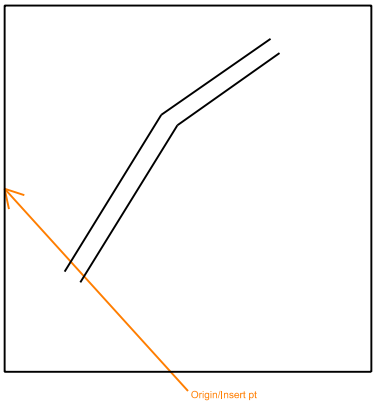
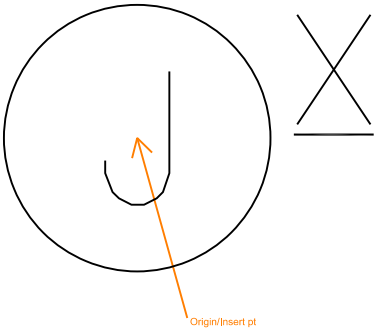
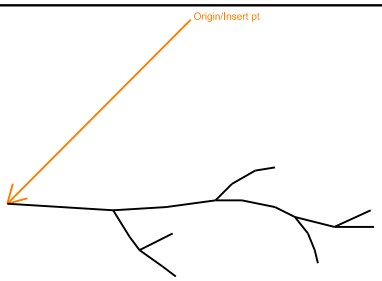
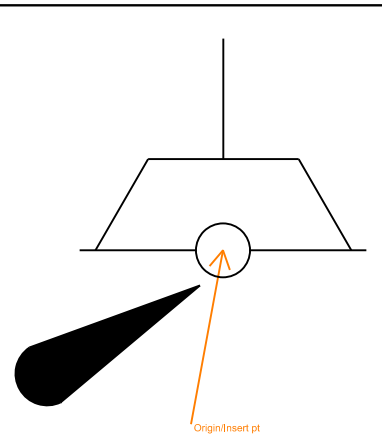
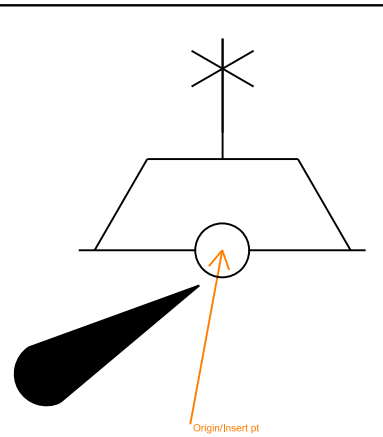
Survey/Mapping: HUREYE
HURRICANE EYE
Element type: Symbol

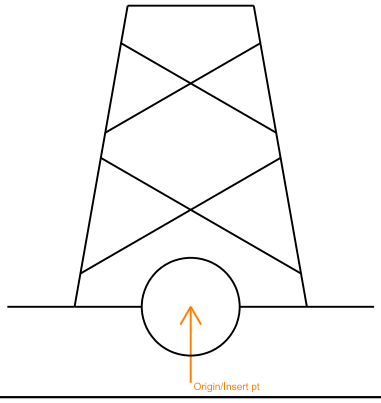


Survey/Mapping: HYDRNT
HYDRANT
Element type: Symbol

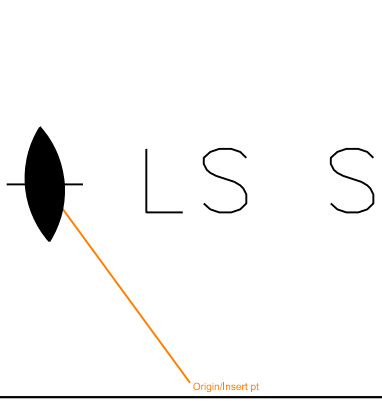


Survey/Mapping: INSHWY
INTERSTATE HIGHWAY SYMBOL
Element type: Symbol

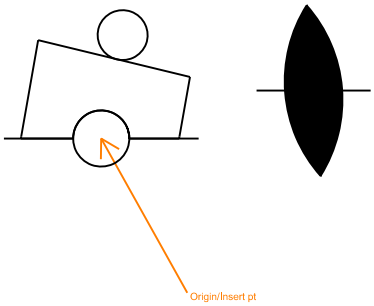
		
Survey/Mapping: INSTBY OIL GAS INSTALL BUOY Element type: Symbol	Survey/Mapping: IPC IRON PIN AND CAP Element type: Symbol	Survey/Mapping: IWMETR INDUSTRIAL WASTE WATR METER Element type: Symbol
		
Survey/Mapping: IWMHOL INDUSTRIAL WASTE WATR MANHL Element type: Symbol	Survey/Mapping: JETTY JETTY Element type: Symbol	Survey/Mapping: JNBX EXTERIOR UTIL JUNCTION BOX Element type: Symbol
		
Survey/Mapping: KELP KELP SEAWEED Element type: Symbol	Survey/Mapping: LANBY1 LANBY SUPERBUOY NAVAID Element type: Symbol	Survey/Mapping: LANBY2 LANBY SUPERBUOY NAVAID Element type: Symbol



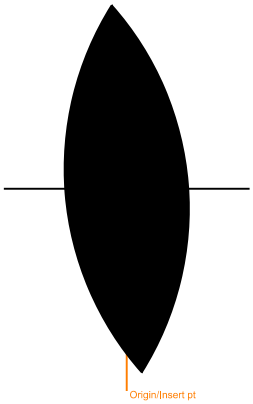
Survey/Mapping: LATBCN
LATTICE BEACON
Element type: Symbol



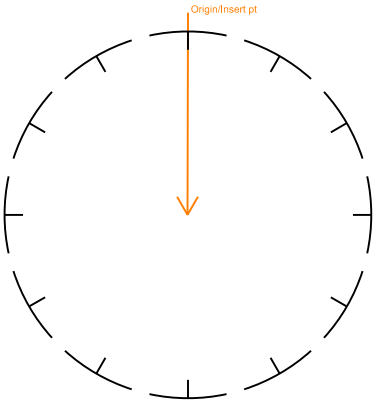
Survey/Mapping: LIFEBT
LIFEBOAT STATION
Element type: Symbol



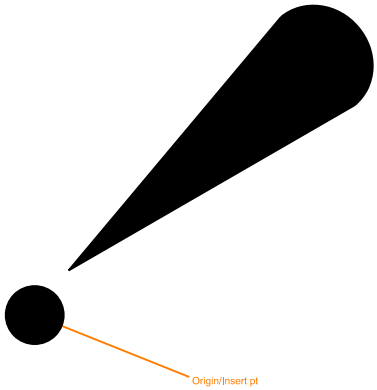
Survey/Mapping: LIFEM1
LIFEBOAT AT MOORING
Element type: Symbol



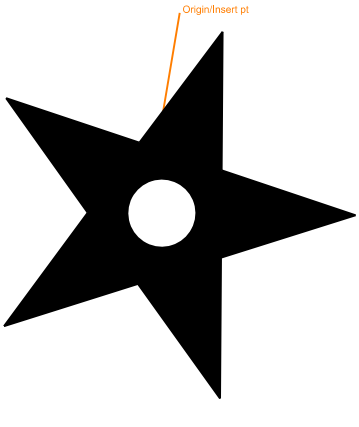
Survey/Mapping: LIFEM2
LIFEBOAT AT MOORING
Element type: Symbol



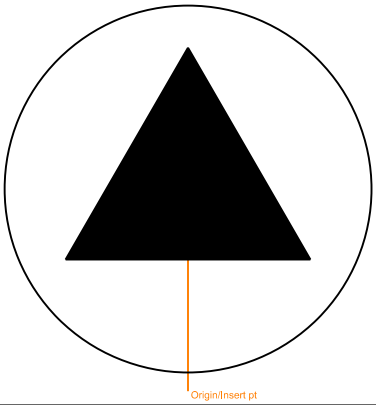
Survey/Mapping: LIMIT
LIMIT OF SAFETY ZONE
Element type: Symbol



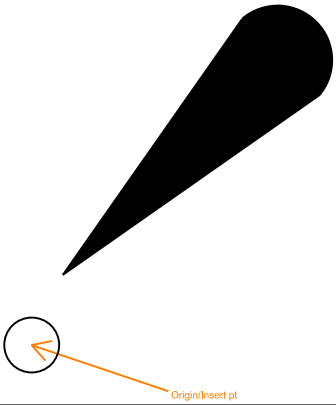
Survey/Mapping: LITSV1
FLOATING LIGHT
Element type: Symbol



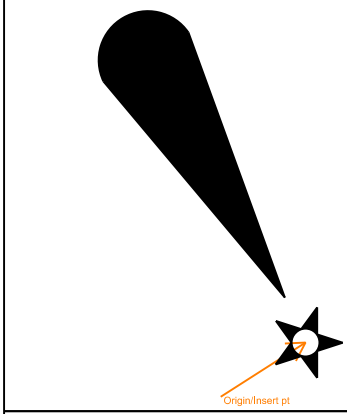
Survey/Mapping: LITSV2
FLOATING LIGHT
Element type: Symbol



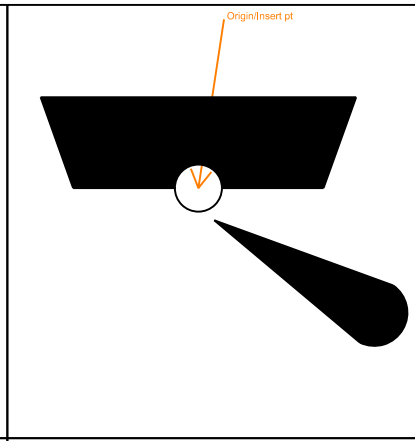
Survey/Mapping: LOOKTR
LOOKOUT STATION WATCH
Element type: Symbol



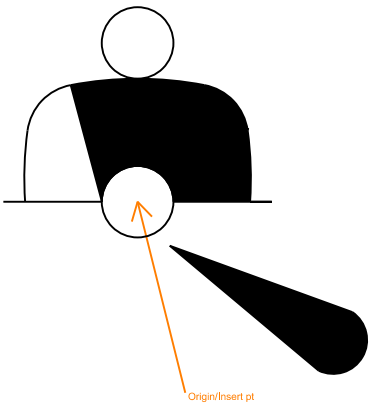
Survey/Mapping: LTART
ARTICULATED LIGHT
Element type: Symbol



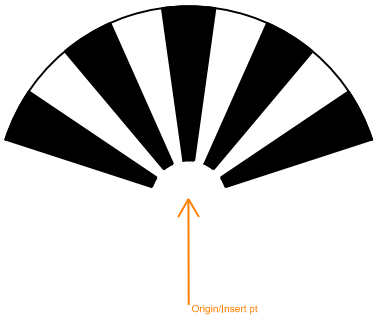
Survey/Mapping: LTBEAC
LIGHTED BEACON
Element type: Symbol



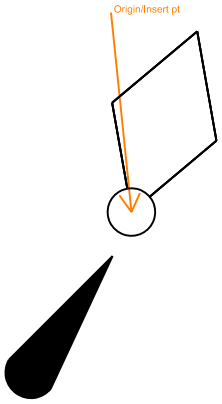
Survey/Mapping: LTBY
LIGHTED BUOY
Element type: Symbol



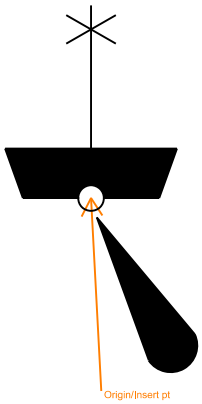
Survey/Mapping: LTBYBB
LIGHTED BARREL BUOY BLACK
Element type: Symbol



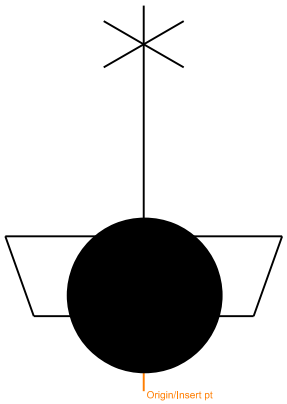
Survey/Mapping: LTFLD
FLOODLIGHT
Element type: Symbol



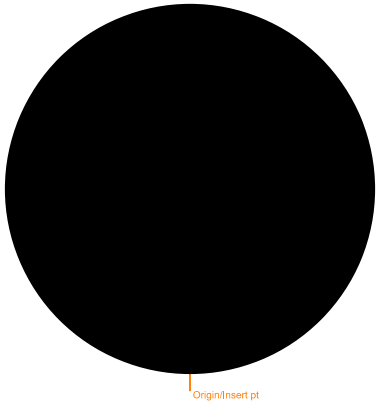
Survey/Mapping: LTFLT
LIGHT FLOAT
Element type: Symbol



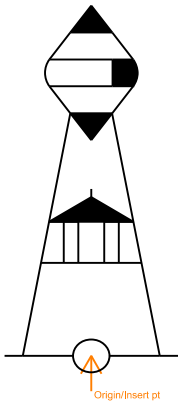
Survey/Mapping: LTFLT1
LIGHT FLOAT IALA
Element type: Symbol



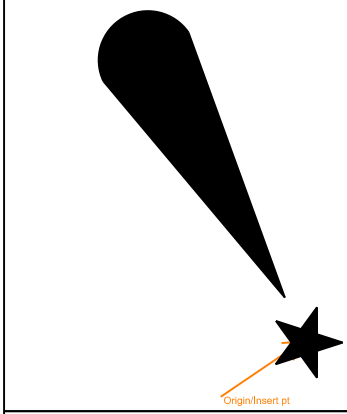
Survey/Mapping: LTFLT2
LIGHT FLOAT IALA
Element type: Symbol



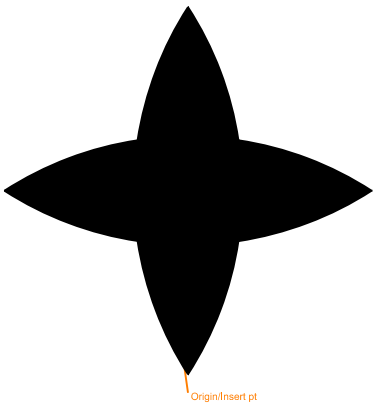
Survey/Mapping: LTHOU1
LIGHTHOUSE
Element type: Symbol



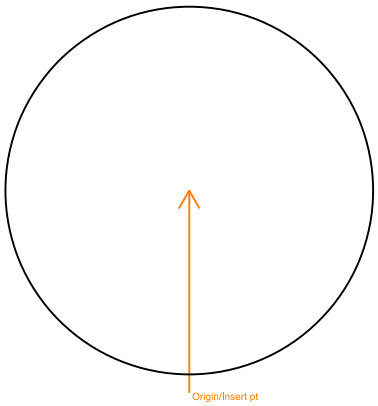
Survey/Mapping: LTHOU2
LIGHTHOUSE
Element type: Symbol



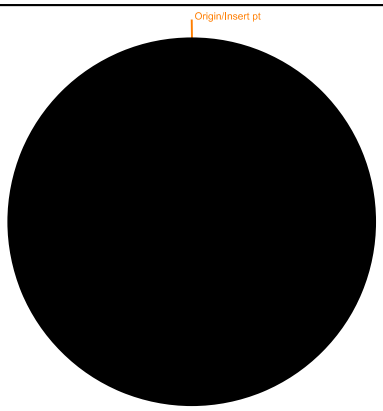
Survey/Mapping: LTMAJ1
MAJOR FLOATING LIGHT
Element type: Symbol



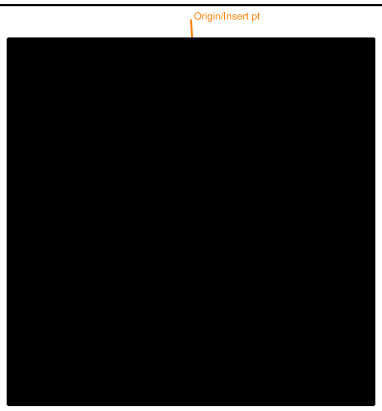
Survey/Mapping: LTMAJ2
MAJOR FLOATING LIGHT
Element type: Symbol



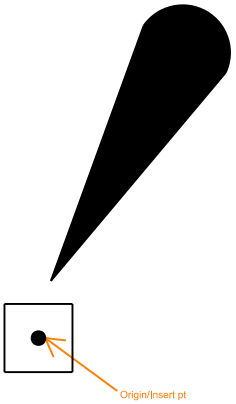
Survey/Mapping: LTMARK
LIGHTED MARKER
Element type: Symbol



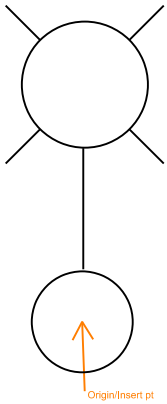
Survey/Mapping: LTMIN2
MINOR FLOATING LIGHT
Element type: Symbol



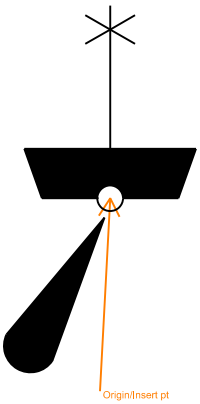
Survey/Mapping: LTPLT1
LIGHTED PLATFORM
Element type: Symbol



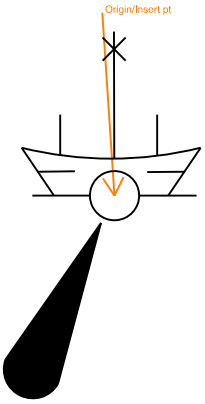
Survey/Mapping: LTPLT2
LIGHTED PLATFORM
Element type: Symbol



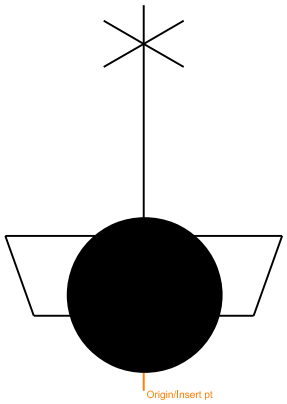
Survey/Mapping: LTPLX
LIGHT POLE_EXISTING
Element type: Symbol



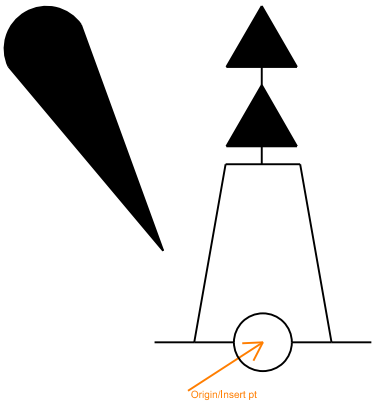
Survey/Mapping: LTSHP1
LIGHTED VESSEL_LIGHTSHIP
Element type: Symbol



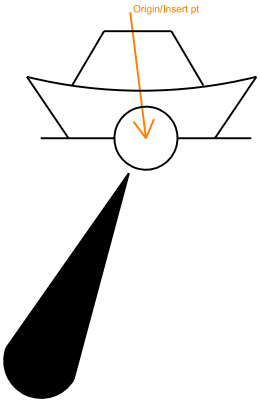
Survey/Mapping: LTSHP2
LIGHTED VESSEL_LIGHTSHIP
Element type: Symbol



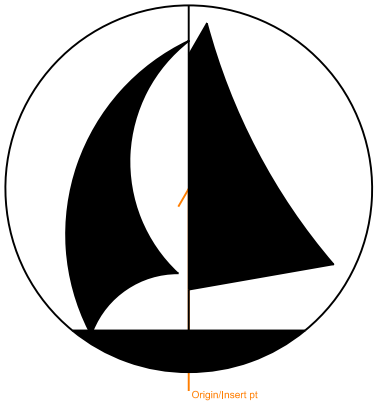
Survey/Mapping: LTSHP3
LIGHTED VESSEL LIGHTSHIP
Element type: Symbol



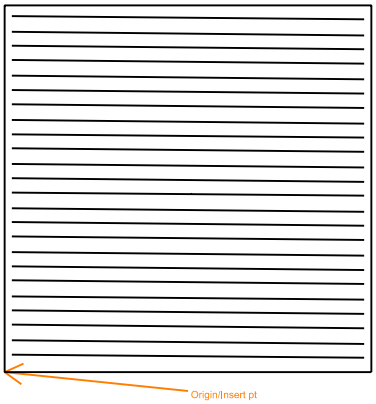
Survey/Mapping: LTTOW2
LIGHTED BEACON TOWER
Element type: Symbol



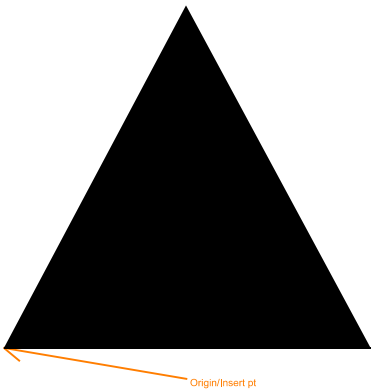
Survey/Mapping: LTVES2
UNMANNED LIGHT VESSEL
Element type: Symbol



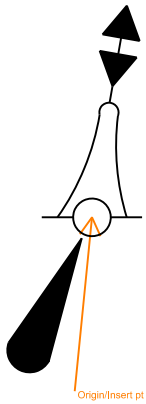
Survey/Mapping: MARINA
BOAT HARBOR MARINA
Element type: Symbol



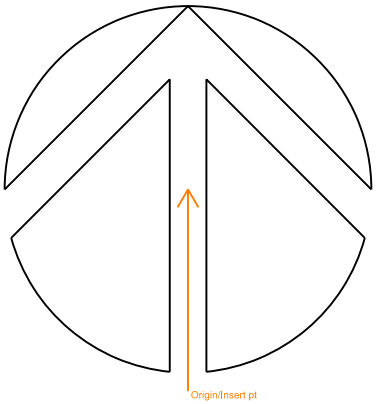
Survey/Mapping: MARKGD
GREEN DAY MARKER
Element type: Symbol



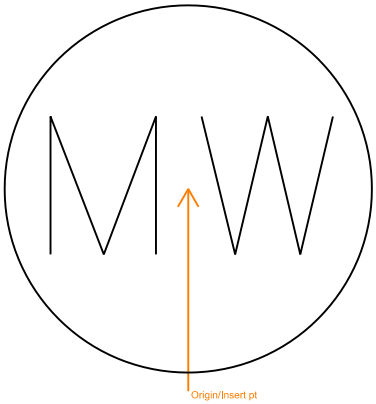
Survey/Mapping: MARKRD
RED DAY MARKER
Element type: Symbol



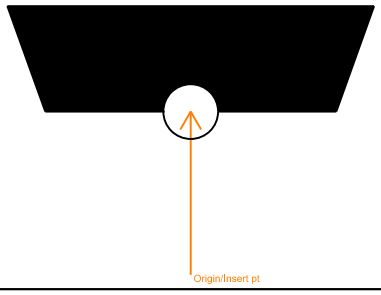
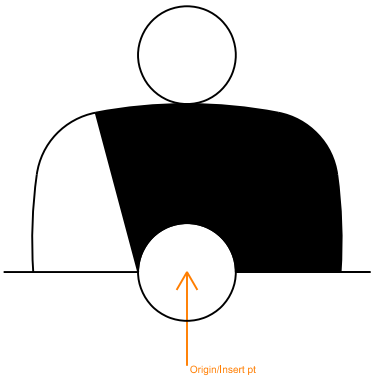
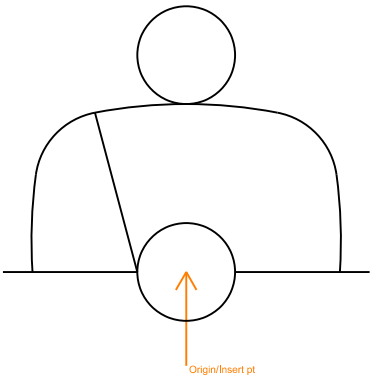
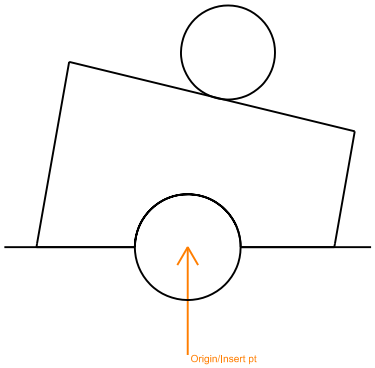
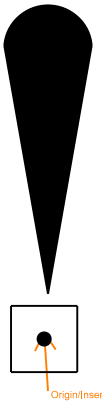
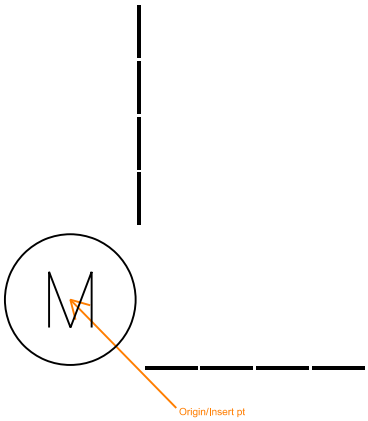
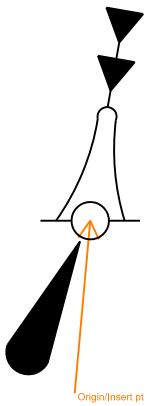
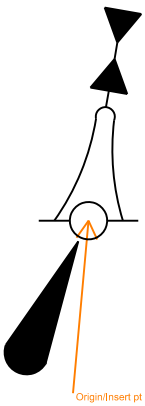
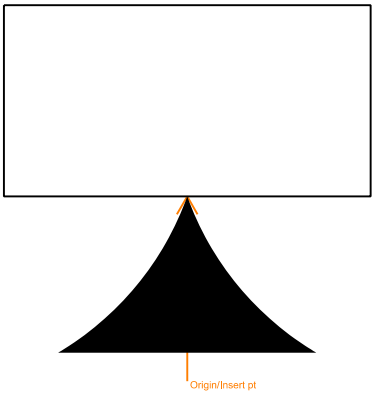
Survey/Mapping: MEAST
LIGHTED EAST MARKER BUOY
Element type: Symbol

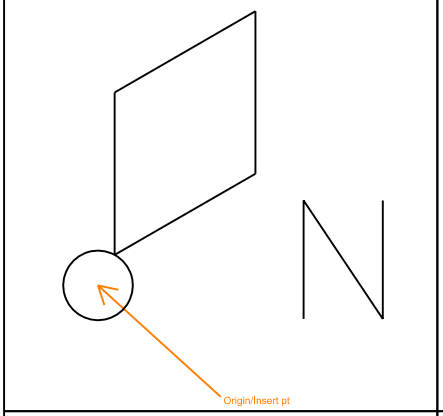


Survey/Mapping: MNORTH
NORTH ARROW
Element type: Symbol

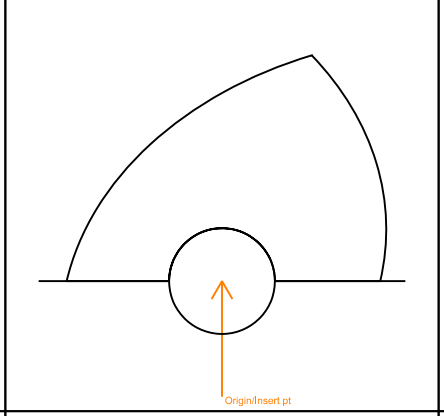


Survey/Mapping: MONWEL
MONITORING WELL
Element type: Symbol

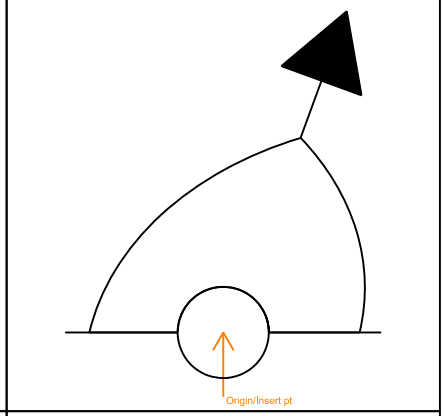
		
Survey/Mapping: MORB MOORING BUOY Element type: Symbol	Survey/Mapping: MORBBB MOORING BARREL BUOY BLACK Element type: Symbol	Survey/Mapping: MORBBW MOORING BARREL BUOY WHITE Element type: Symbol
		
Survey/Mapping: MORBCW MOORING CAN BUOY WHITE Element type: Symbol	Survey/Mapping: MORTWR MOORING TOWER Element type: Symbol	Survey/Mapping: MOTRHP MOTOR HP Element type: Symbol
		
Survey/Mapping: MSOUTH LIGHTED SOUTH MARKER BUOY Element type: Symbol	Survey/Mapping: MWEST LIGHTED WEST MARKER BUOY Element type: Symbol	Survey/Mapping: NOTICE NOTICE BOARD Element type: Symbol



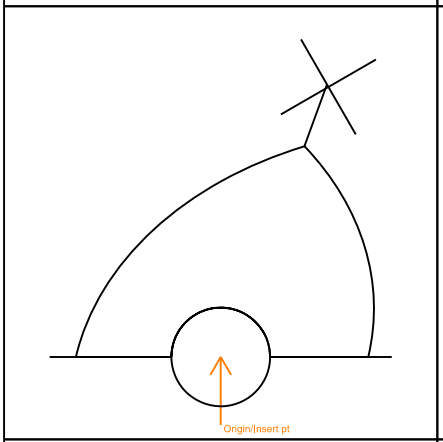
Survey/Mapping: NUN1
NUN BUOY
Element type: Symbol



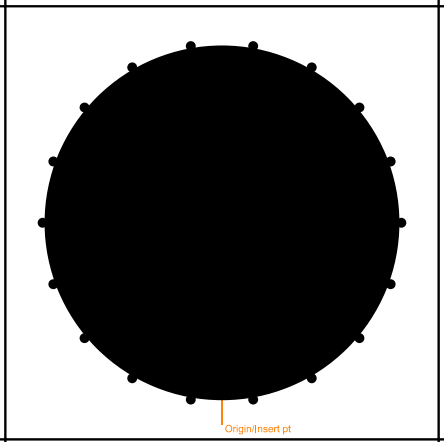
Survey/Mapping: NUN2
NUNBUOY
Element type: Symbol



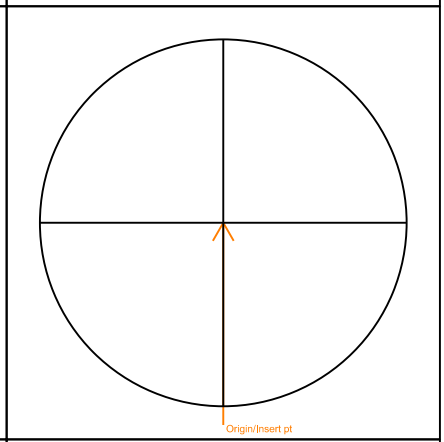
Survey/Mapping: NUNBT
BLACK NUN BUOY W TOPMARK
Element type: Symbol



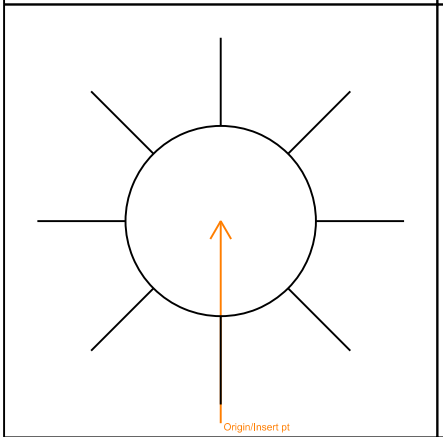
Survey/Mapping: NUNWT
WHITE NUN BUOY W TOPMARK
Element type: Symbol



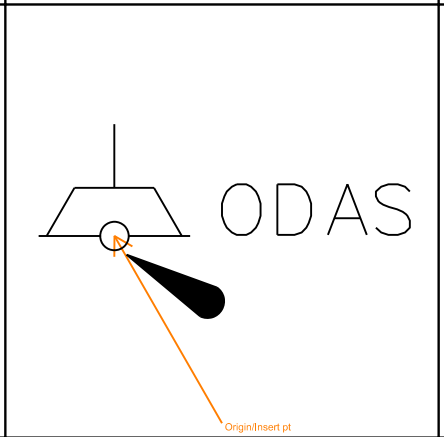
Survey/Mapping: OBS
OBSTRUCTION
Element type: Symbol



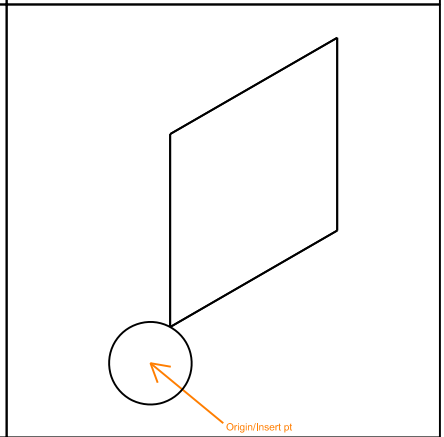
Survey/Mapping: OBSSPT
OBSERVATION SPOT
Element type: Symbol



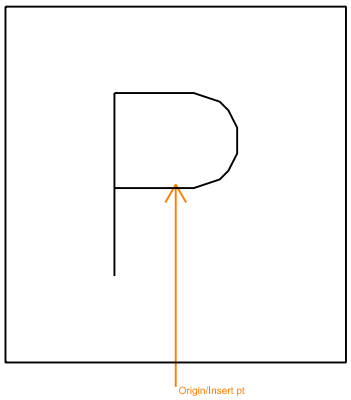
Survey/Mapping: OBSTRL
OBSTRUCTION LIGHT
Element type: Symbol



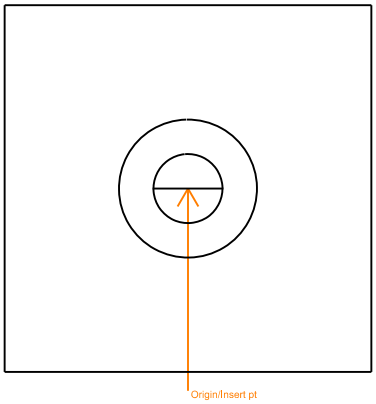
Survey/Mapping: ODAS
ODAS BUOY DATA COLLECT
Element type: Symbol



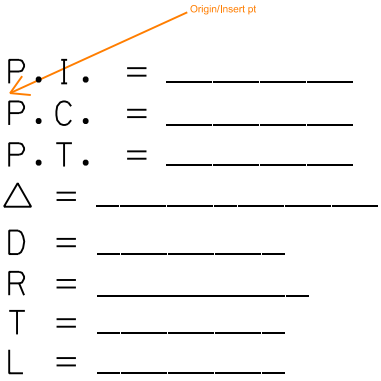
Survey/Mapping: OUTB
BUOY MARKING OUTFALL
Element type: Symbol



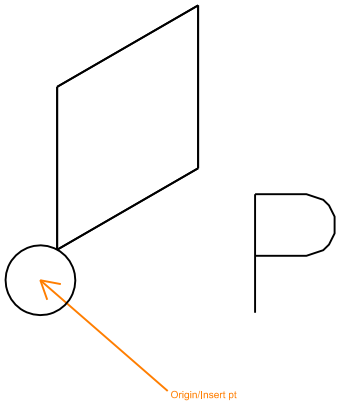
Survey/Mapping: PAPI
PAPI LIGHT UNIT
Element type: Symbol



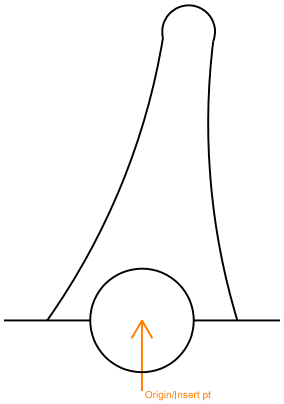
Survey/Mapping: PHOCPT
PHOTO CONTROL POINT
Element type: Symbol



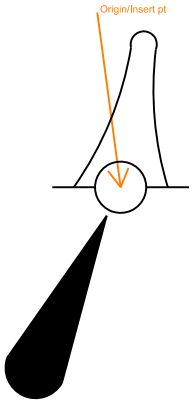
Survey/Mapping: PIINFO
PI INFORMATION
Element type: Symbol



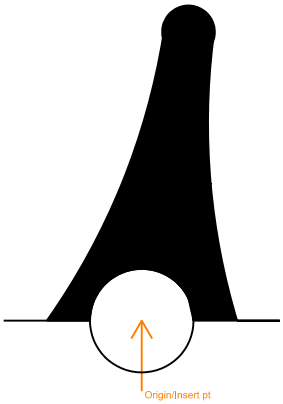
Survey/Mapping: PIL1
PILLAR BUOY
Element type: Symbol



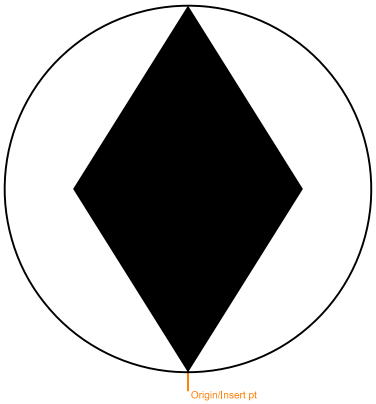
Survey/Mapping: PIL2
PILLAR BUOY
Element type: Symbol



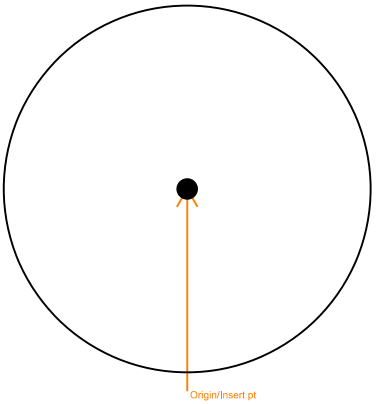
Survey/Mapping: PILLT
LIGHTED PILLAR BUOY
Element type: Symbol



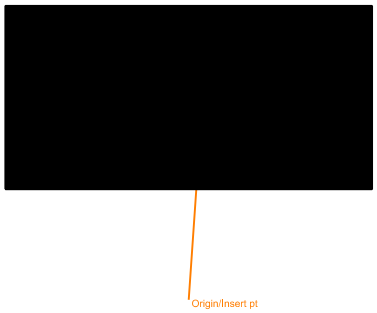
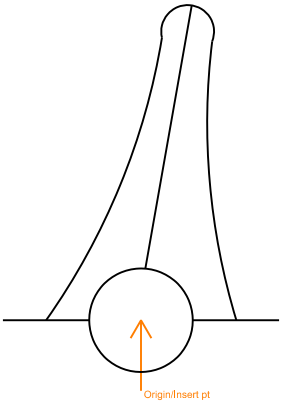
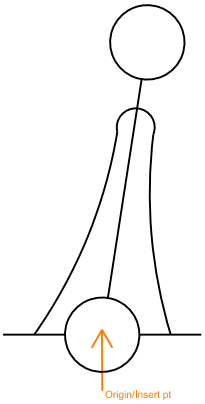
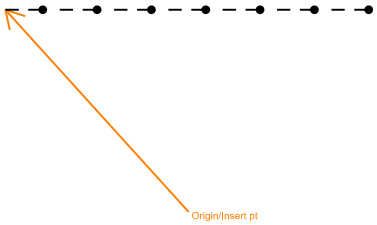
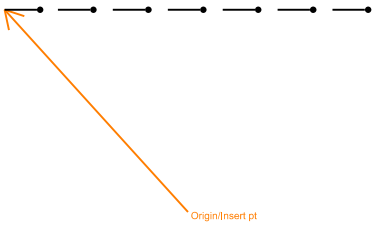
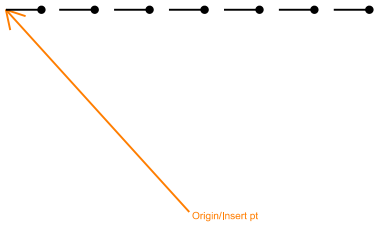
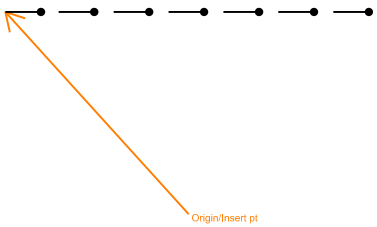
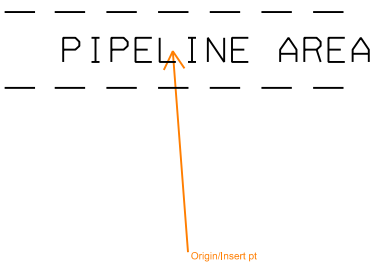
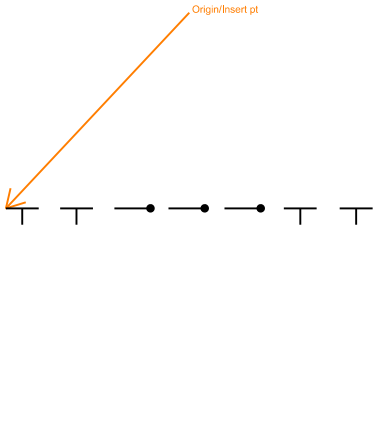
Survey/Mapping: PILM
MULT COLOR PILLAR BUOY
Element type: Symbol

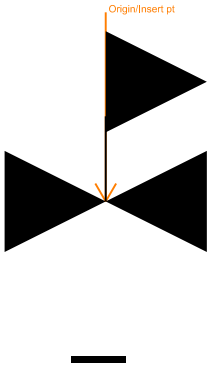


Survey/Mapping: PILOT
BOARDING PLACE
Element type: Symbol

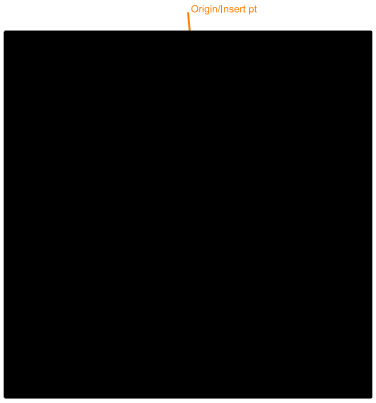


Survey/Mapping: PILOT1
PILOT OFFICE
Element type: Symbol

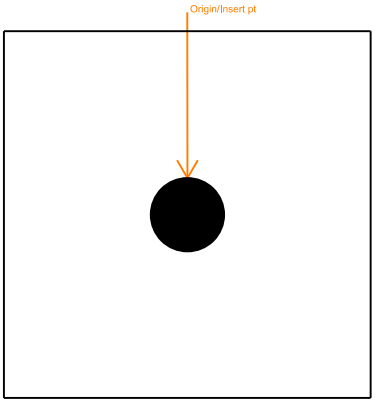
		
Survey/Mapping: PILOT2 PILOT OFFICE Element type: Symbol	Survey/Mapping: PILV VERT STRIPE PILLAR BUOY Element type: Symbol	Survey/Mapping: PILVT V STRP PILLAR BUOY W TOPMK Element type: Symbol
		
Survey/Mapping: PIPDIS DISUSED PIPELINE PIPE Element type: Symbol	Survey/Mapping: PIPE WATER SEWER OUTFALL INTAKE Element type: Symbol	Survey/Mapping: PIPE1 OIL GAS PIPELINE Element type: Symbol
		
Survey/Mapping: PIPE2 OIL GAS PIPELINE Element type: Symbol	Survey/Mapping: PIPES1 OIL GAS PIPELINE AREA Element type: Symbol	Survey/Mapping: PIPES2 OIL GAS PIPELINE AREA Element type: Symbol



Survey/Mapping: PIVALV
POST INDICATOR VALVE
Element type: Symbol

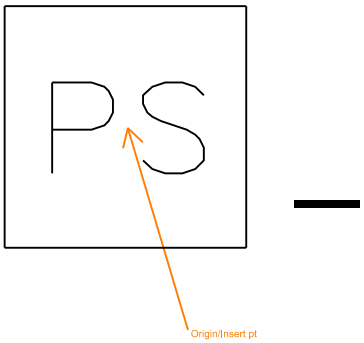


Survey/Mapping: PLAT1
PROD PLATFORM OIL DERRICK
Element type: Symbol

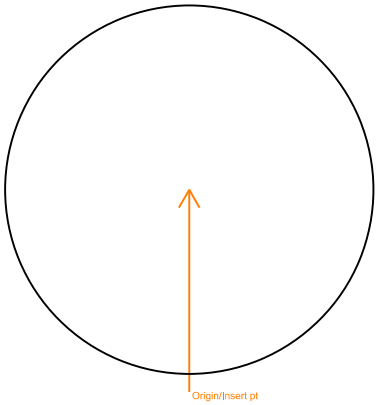


Survey/Mapping: PLAT2
PROD PLATFORM OIL DERRICK
Element type: Symbol

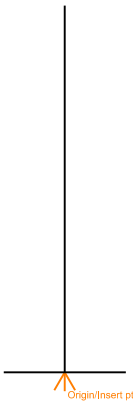
Survey/Mapping: PLAT3
PROD PLATFORM OIL DERRICK
Element type: Symbol



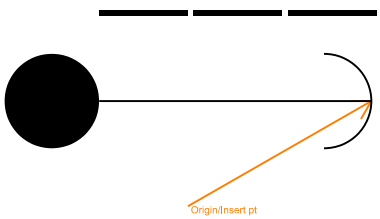
Survey/Mapping: PMPSTA
PUMP STATION
Element type: Symbol



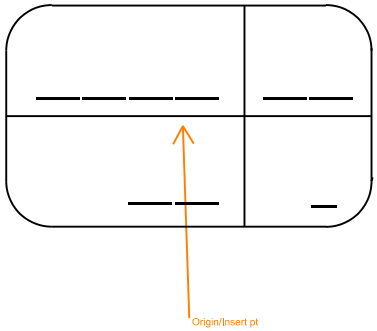
Survey/Mapping: POLE1
POLE STAKE PERCH
Element type: Symbol



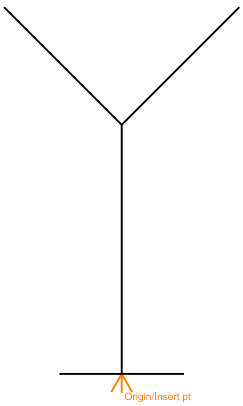
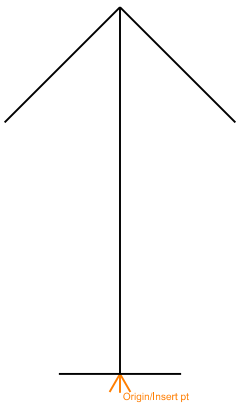
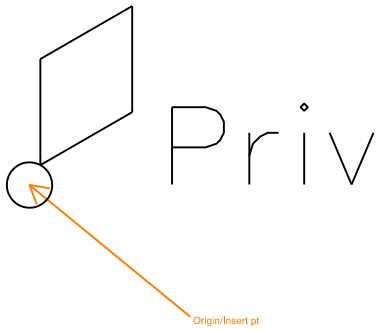
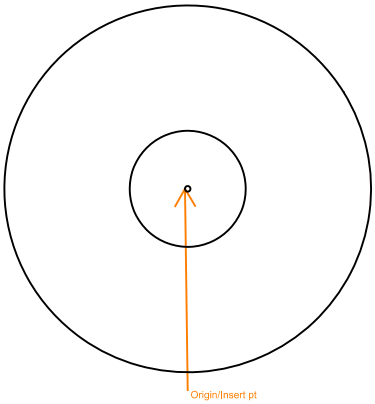
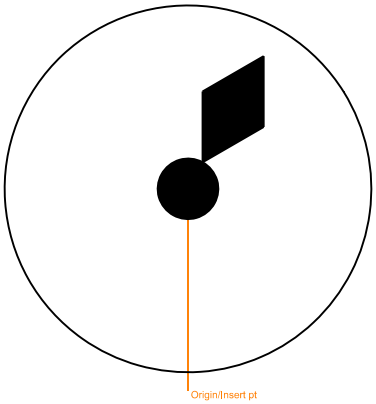
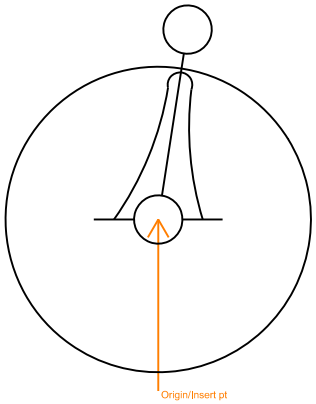
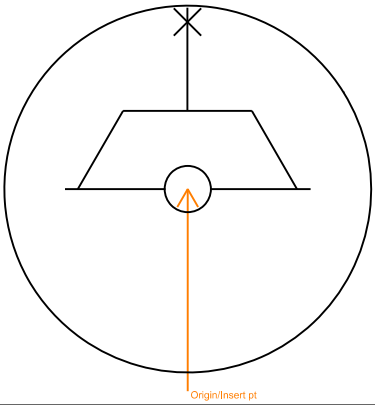
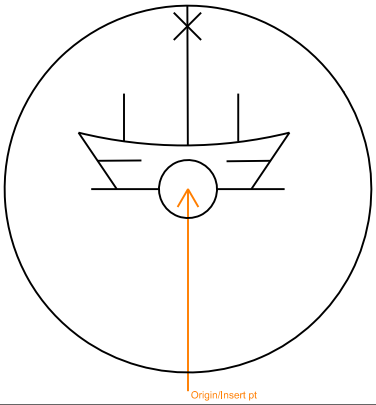
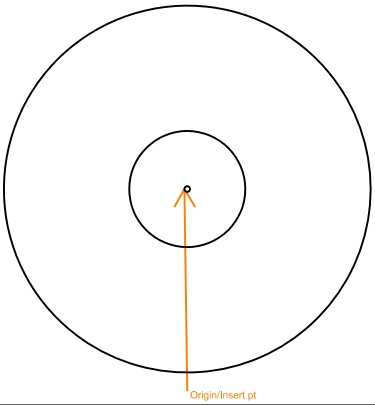
Survey/Mapping: POLE3
POLE STAKE PERCH
Element type: Symbol

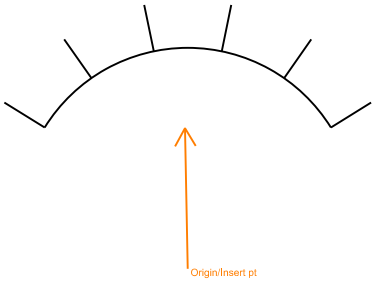
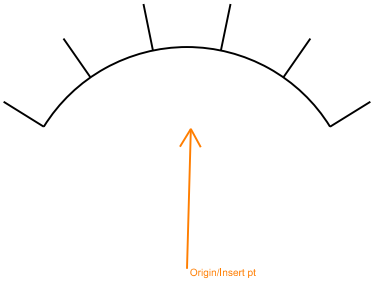
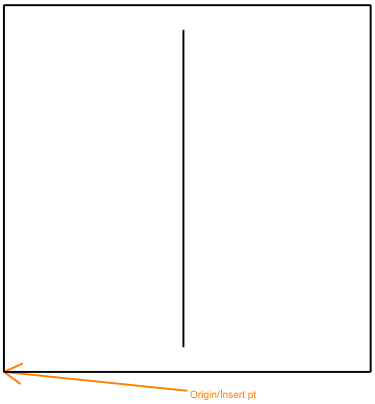
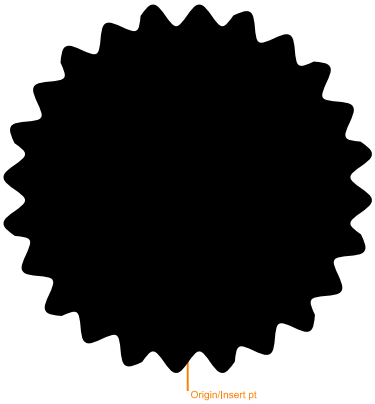
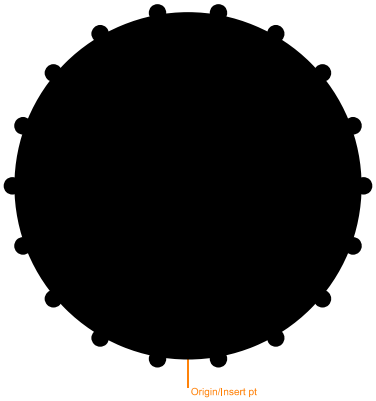
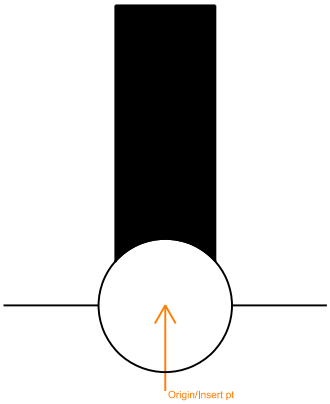
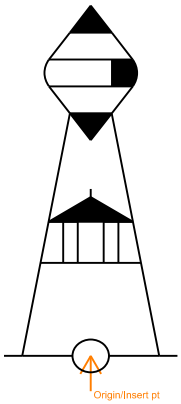
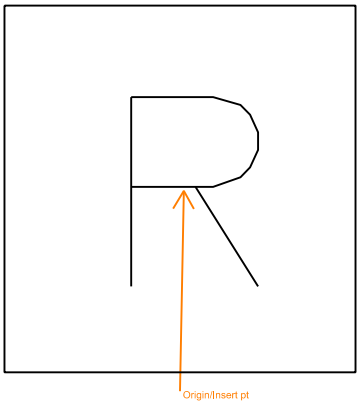
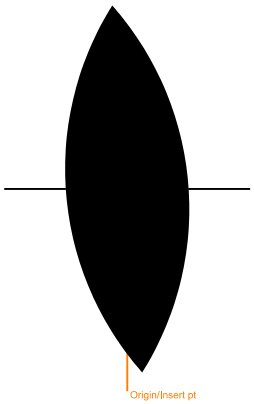


Survey/Mapping: POLEAR
AERIAL POLE W GUYING
Element type: Symbol

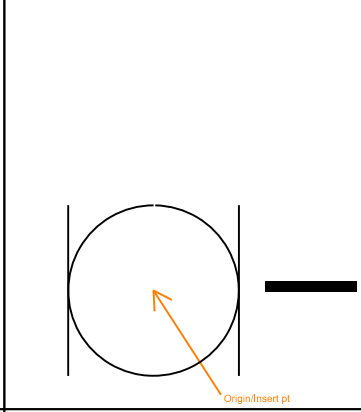


Survey/Mapping: POLEID
POLE IDENT. SYMBOL
Element type: Symbol

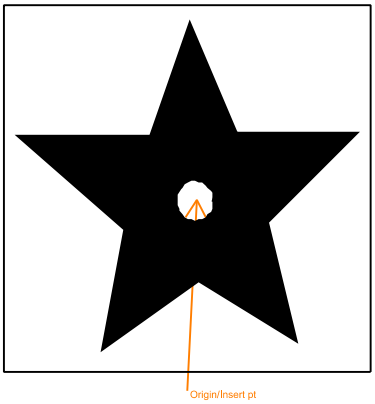
		
Survey/Mapping: POLEP PORT HAND STAKE POLE Element type: Symbol	Survey/Mapping: POLES STARBOARD HAND POLE STAKE Element type: Symbol	Survey/Mapping: PRIVB PRIVATE BARREL BUOY Element type: Symbol
		
Survey/Mapping: RADAR RADAR STATION OR BEACON Element type: Symbol	Survey/Mapping: RADAR1 FLOATING RADAR BEACON Element type: Symbol	Survey/Mapping: RADAR2 FLOATING RADAR BEACON Element type: Symbol
		
Survey/Mapping: RADAR3 FLOATING RADAR BEACON Element type: Symbol	Survey/Mapping: RADAR4 FLOATING RADAR BEACON Element type: Symbol	Survey/Mapping: RADIO RADIO BEACON GENERAL Element type: Symbol

		
Survey/Mapping: RADRF1 RADAR REFLECTOR OR FEATURE Element type: Symbol	Survey/Mapping: RADRF2 RADAR REFLECTOR OR FEATURE Element type: Symbol	Survey/Mapping: RANGEX RANGE EXTENSION Element type: Symbol
		
Survey/Mapping: REEF CORAL REEF LARGE ICON Element type: Symbol	Survey/Mapping: REEF1 CORAL REEF SMALL ICON Element type: Symbol	Survey/Mapping: REFUG1 REFUGE BEACON Element type: Symbol
		
Survey/Mapping: REFUG2 REFUGE BEACON Element type: Symbol	Survey/Mapping: REIL REIL LIGHT UNIT Element type: Symbol	Survey/Mapping: RESCUE RESCUE STATION Element type: Symbol

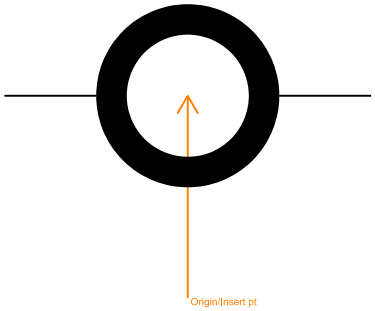
Survey/Mapping: RESPLT
OBS RESEARCH PLATFORM
Element type: Symbol



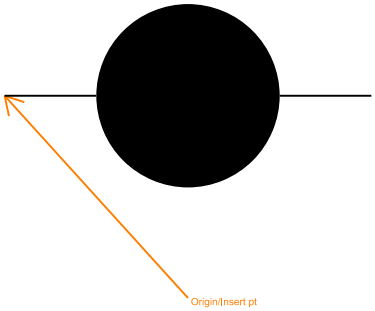
Survey/Mapping: RGVALV
REGULATOR VALVE
Element type: Symbol



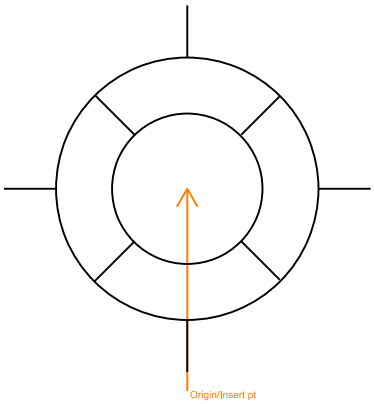
Survey/Mapping: RSTAR
RANGE STAR
Element type: Symbol



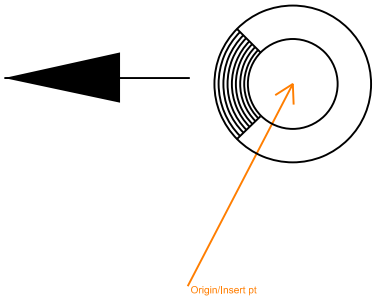
Survey/Mapping: RVMMOP
OPEN RIVER MILE MARKER
Element type: Symbol



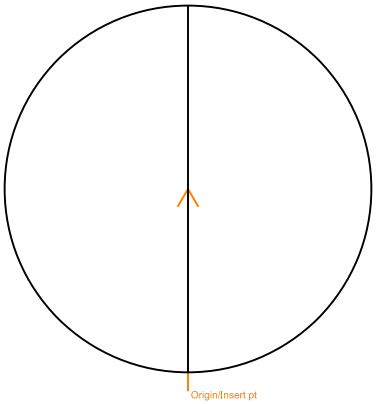
Survey/Mapping: RVMMSO
SOLID RIVER MILE MARKER
Element type: Symbol



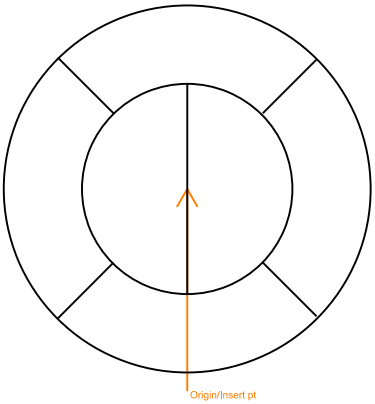
Survey/Mapping: RWCLL
RW CENTERLINE LIGHT
Element type: Symbol



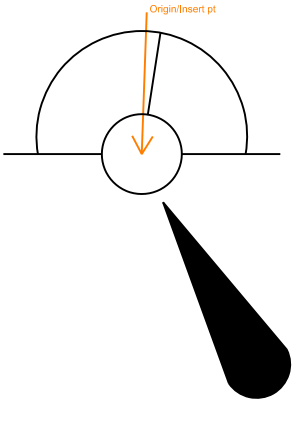
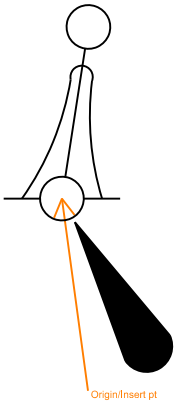
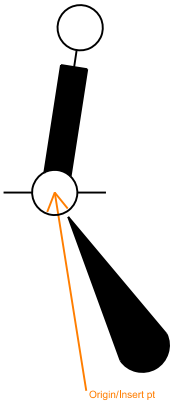
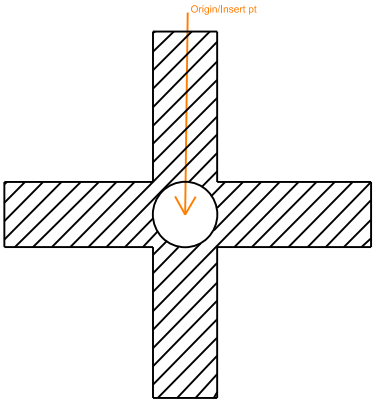
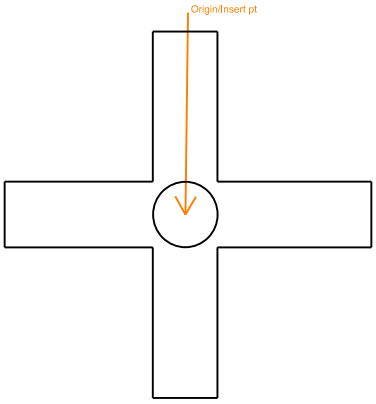
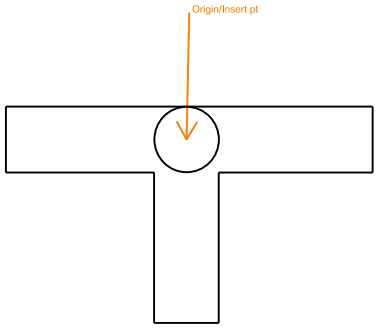
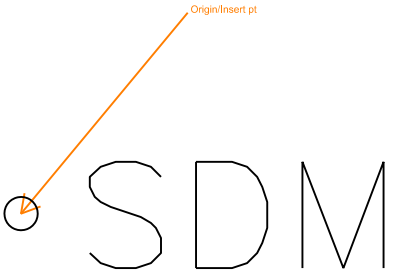
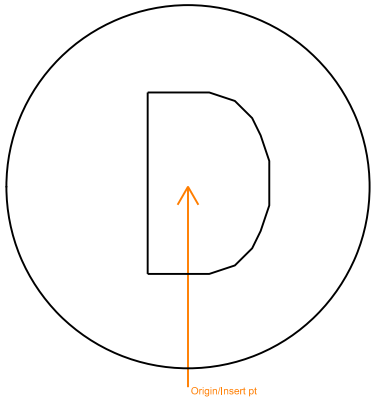
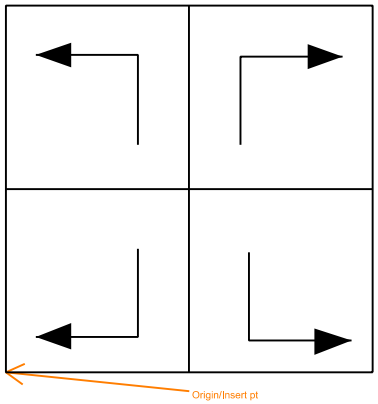
Survey/Mapping: RWEL
RW END LIGHT
Element type: Symbol

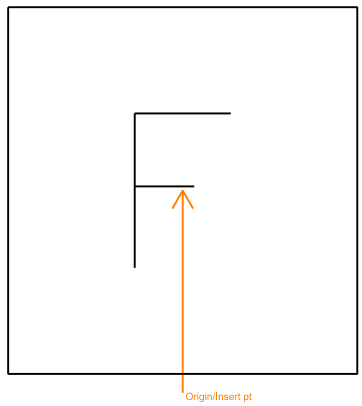


Survey/Mapping: RWLEL
RW EDGE LIGHT_ELEVATED
Element type: Symbol

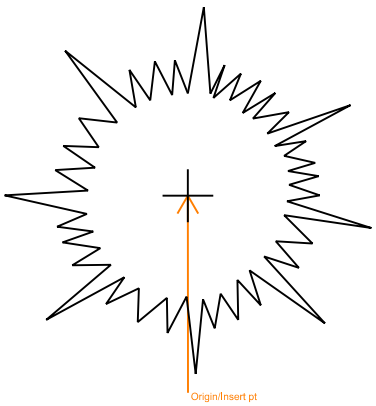


Survey/Mapping: RWLSF
RW EDGE LIGHT_SEMIFLUSH
Element type: Symbol

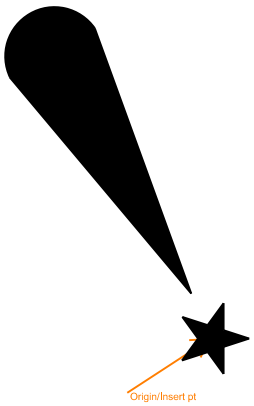
		
Survey/Mapping: SAFE1 LIGHTED SAFE WATER MARK Element type: Symbol	Survey/Mapping: SAFE2 LIGHTED SAFE WATER MARK Element type: Symbol	Survey/Mapping: SAFE3 LIGHTED SAFE WATER MARK Element type: Symbol
		
Survey/Mapping: SCNRH SECTION CORNER HATCHED Element type: Symbol	Survey/Mapping: SCNRO SECTION CORNER OPEN Element type: Symbol	Survey/Mapping: SCNRTO SECTION CORNER T OPEN Element type: Symbol
		
Survey/Mapping: SDM SURFACE DISPLACEMENT MONUMENT Element type: Symbol	Survey/Mapping: SDMHOL STORM DRAINAGE MANHOLE Element type: Symbol	Survey/Mapping: SECCUT TYPICAL SECTION CUT Element type: Symbol



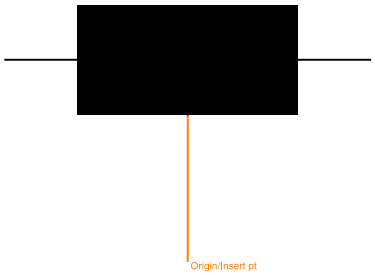
Survey/Mapping: SFL
SEQUENCED FLASHER LIGHT
Element type: Symbol



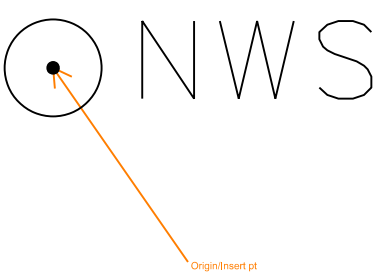
Survey/Mapping: SHRUBC
CONIFEROUS SHRUB
Element type: Symbol



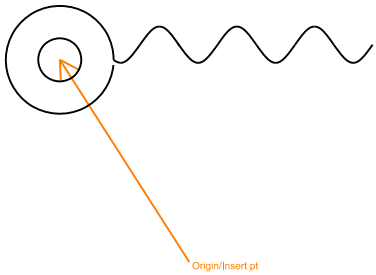
Survey/Mapping: SIGBRG
BRIDGE LIGHT INC TRAFFIC
Element type: Symbol



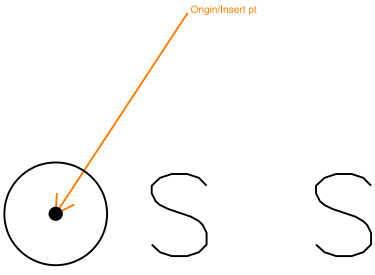
Survey/Mapping: SIGN
SIGN
Element type: Symbol



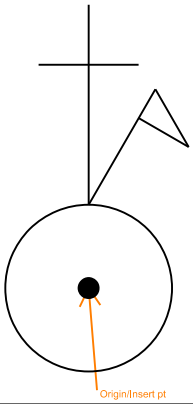
Survey/Mapping: SIGNWS
NAT WEATHER SVC STATION
Element type: Symbol



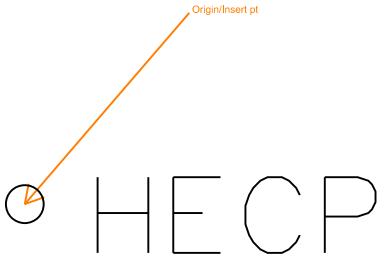
Survey/Mapping: SIGSHO
SUB SIGNAL CONNECT SHORE
Element type: Symbol



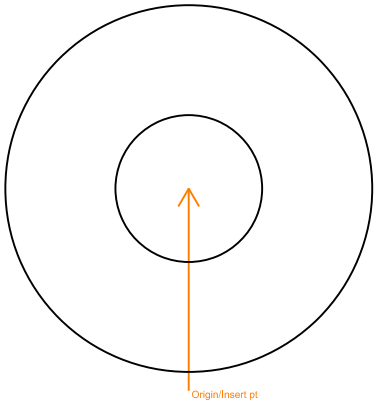
Survey/Mapping: SIGST1
SIGNAL STATION GENERAL
Element type: Symbol



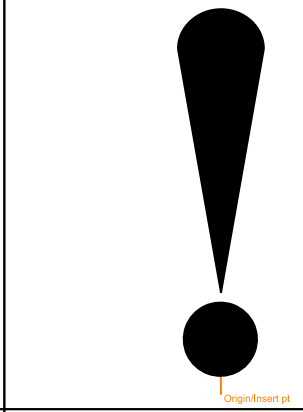
Survey/Mapping: SIGST2
SIGNAL STATION GENERAL
Element type: Symbol



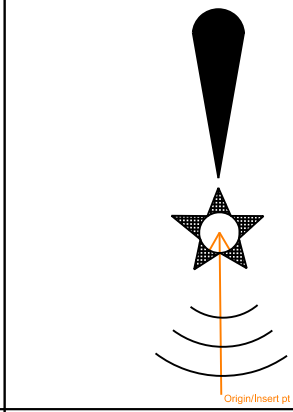
Survey/Mapping: SIGSTP
PORT CONTROL SIGNAL STATION
Element type: Symbol



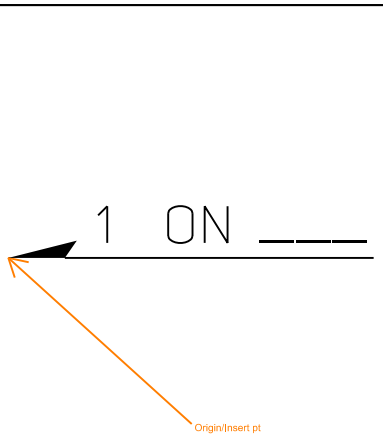
Survey/Mapping: SIGSUB
SUBMARINE SIGNAL
Element type: Symbol



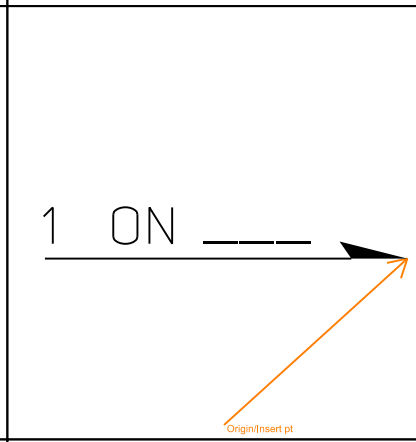
Survey/Mapping: SIRLH1
SIREN AT LIGHTHOUSE
Element type: Symbol



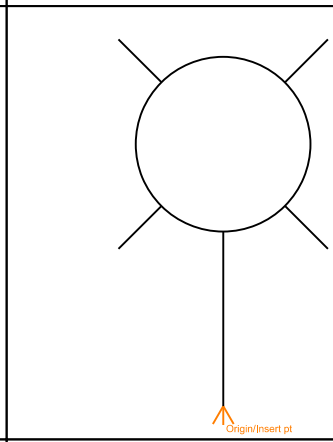
Survey/Mapping: SIRLH2
SIREN AT LIGHTHOUSE
Element type: Symbol



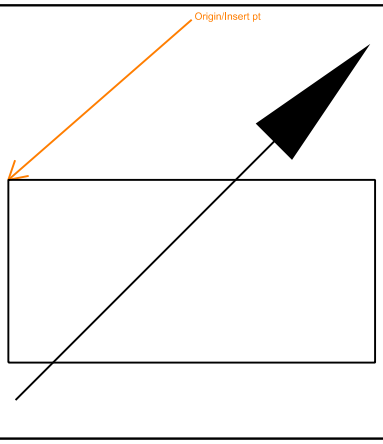
Survey/Mapping: SLARRL
SLOPE AR W ENTER DATA FIELD
Element type: Symbol



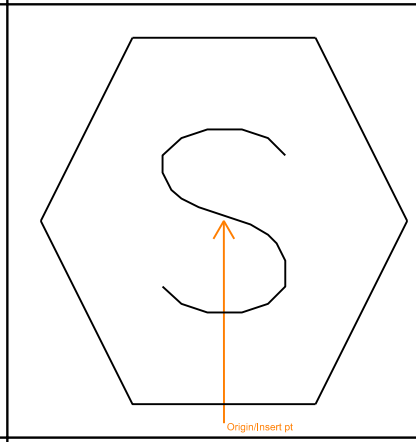
Survey/Mapping: SLARRR
SLOPE AR W ENTER DATA FIELD
Element type: Symbol



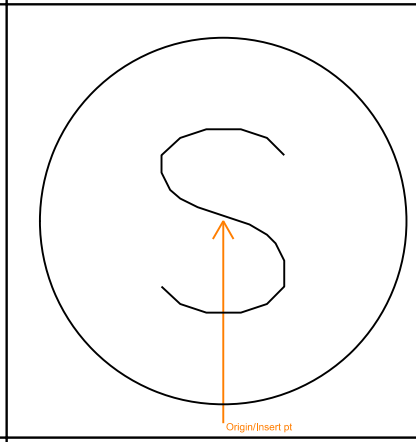
Survey/Mapping: SLLX
STREETLITE LUMINAIRE_EXIST
Element type: Symbol



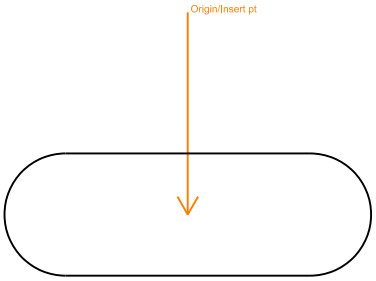
Survey/Mapping: SLREG
CONSTNT CURRENT TRANSFORMER
Element type: Symbol



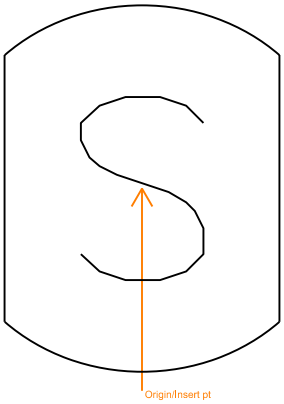
Survey/Mapping: SNMETR
SANITARY METER
Element type: Symbol



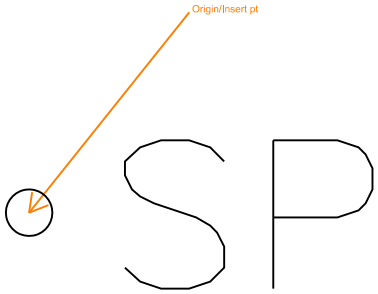
Survey/Mapping: SNMHOL
SANITARY MANHOLE
Element type: Symbol



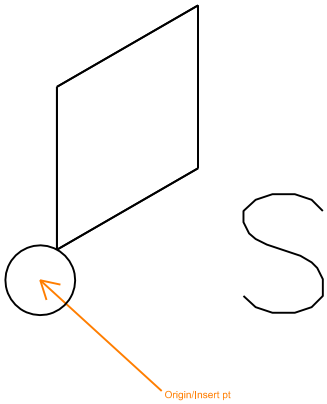
Survey/Mapping: SNPVSL
SANITARY PRESSURE VESSEL
Element type: Symbol



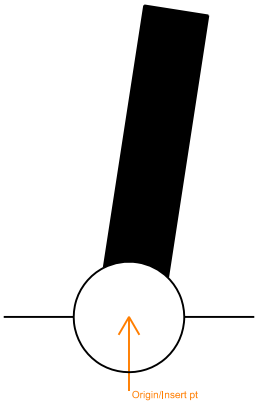
Survey/Mapping: SNVALT
SANITARY VALVE VAULT
Element type: Symbol



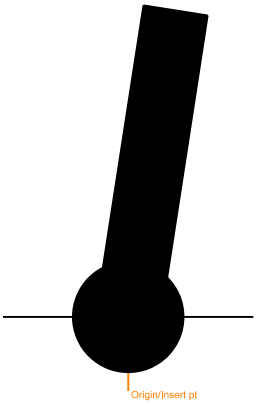
Survey/Mapping: SP
SURVEY PEDESTAL
Element type: Symbol



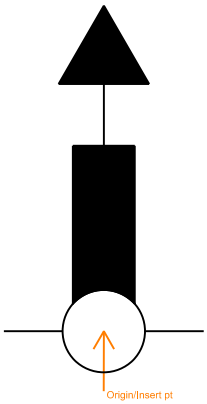
Survey/Mapping: SPAR1
SPAR BUOY SPINDLE BUOY
Element type: Symbol



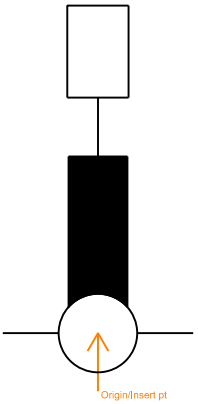
Survey/Mapping: SPAR2
SPAR BUOY SPINDLE BUOY
Element type: Symbol



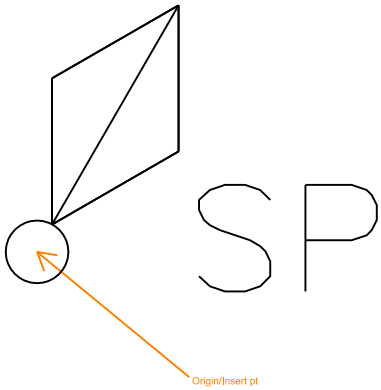
Survey/Mapping: SPARB
BLACK SPARBUOY
Element type: Symbol



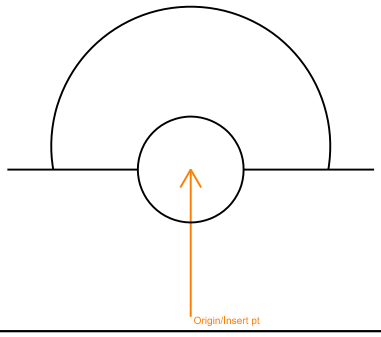
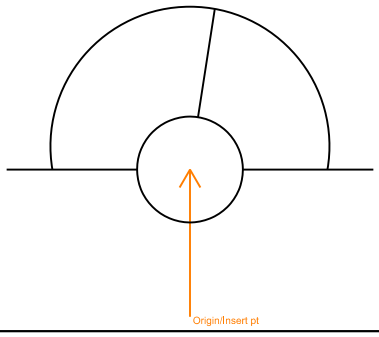
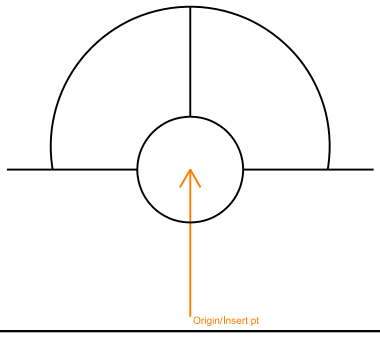
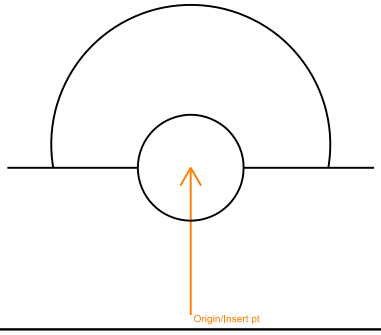
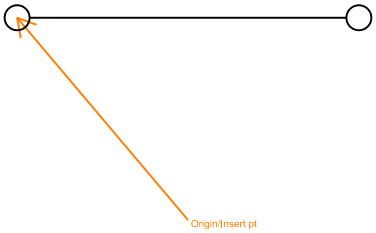
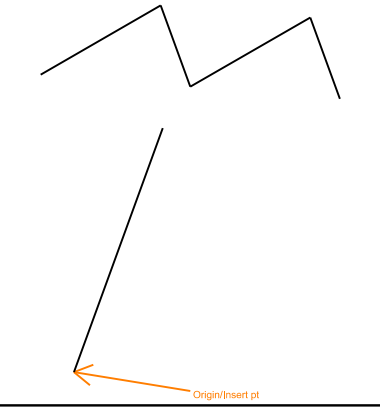
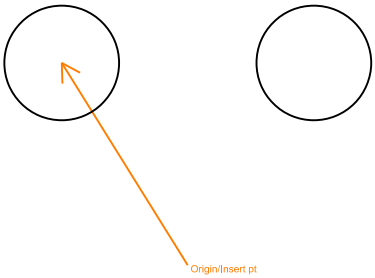
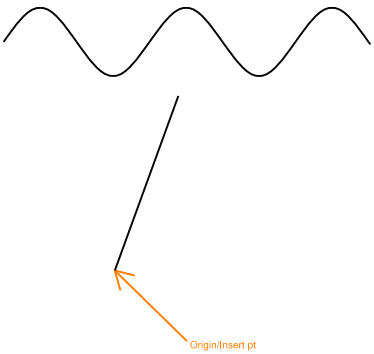
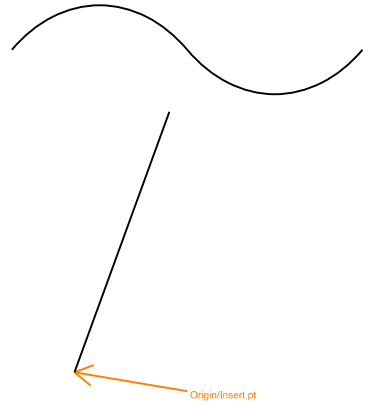
Survey/Mapping: SPARBT
BLACK SPAR BUOY W TOPMARK
Element type: Symbol

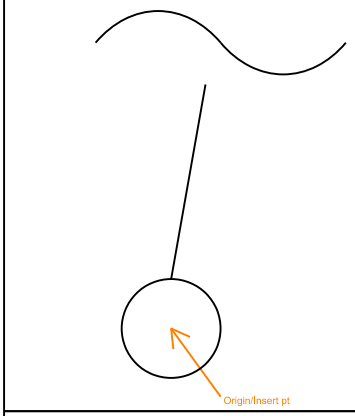


Survey/Mapping: SPARWT
WHITE SPAR BUOY W TOP
Element type: Symbol

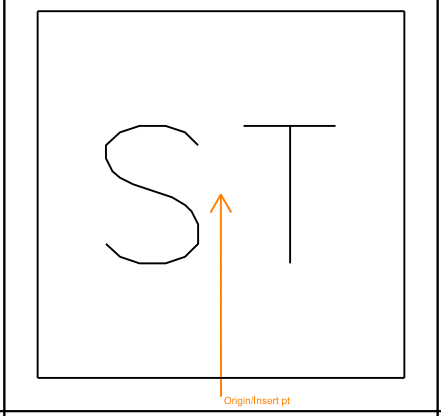


Survey/Mapping: SPH1
SPHERICAL BUOY
Element type: Symbol

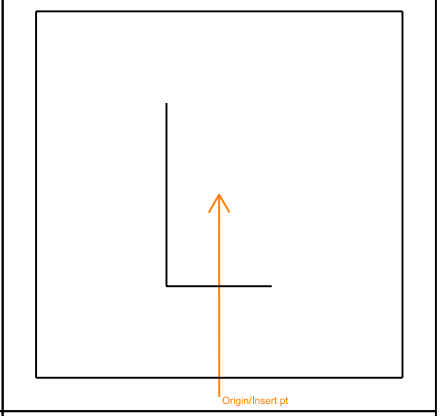
		
Survey/Mapping: SPH2 SPHERICAL BUOY Element type: Symbol	Survey/Mapping: SPHD DIAG STRIPE SPHER BUOY Element type: Symbol	Survey/Mapping: SPHV VERT STRIPE SPHER BUOY Element type: Symbol
		
Survey/Mapping: SPHW WHITE SHERICAL BUOY Element type: Symbol	Survey/Mapping: SPILE SUBMERGED PILING Element type: Symbol	Survey/Mapping: SPILE1 SUBMERGED PILES Element type: Symbol
		
Survey/Mapping: SPILES SUBMERGED PILES Element type: Symbol	Survey/Mapping: SPILEX SUBMERGED PILE W POSITION Element type: Symbol	Survey/Mapping: SPOST SUBMERGED POST Element type: Symbol



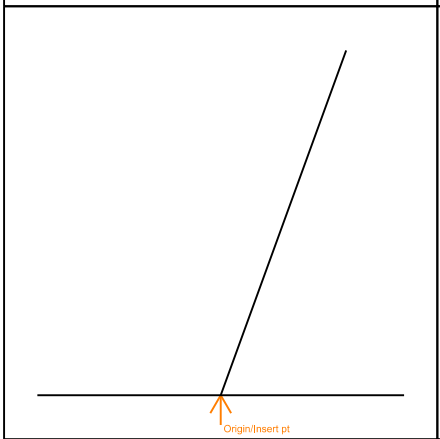
Survey/Mapping: SPOSTX
SUBMERGED POST W POSITION
Element type: Symbol



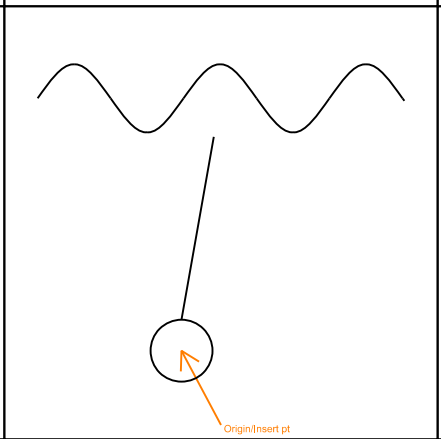
Survey/Mapping: SPTANK
SEPTIC TANK
Element type: Symbol



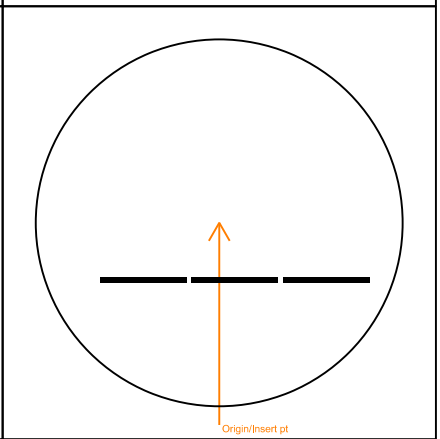
Survey/Mapping: SSLSTA
SANITARY SEWER LIFT STATION
Element type: Symbol



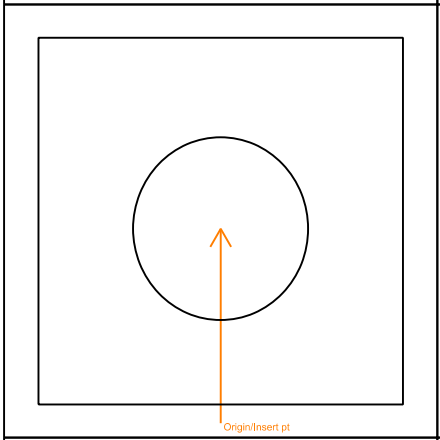
Survey/Mapping: STAKE
STAKE PERCH
Element type: Symbol



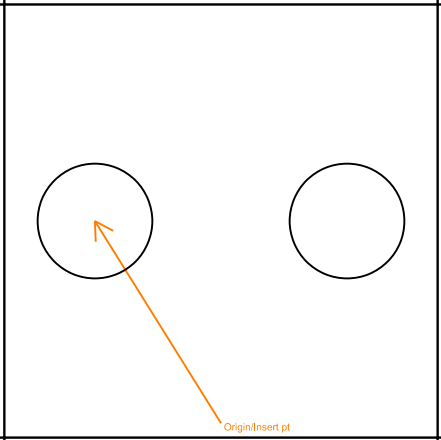
Survey/Mapping: STAKEX
STAKE WITH POSITION
Element type: Symbol



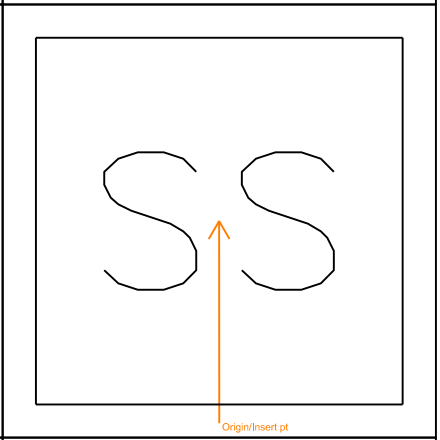
Survey/Mapping: STHWY
STATE HIGHWAY SYMBOL
Element type: Symbol



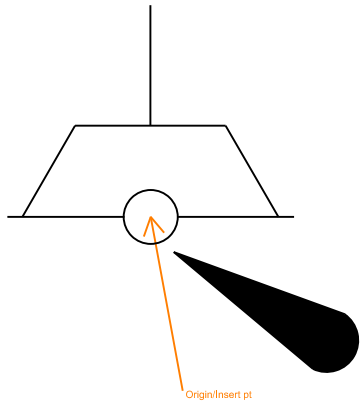
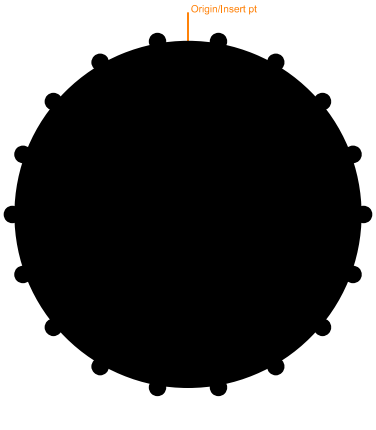
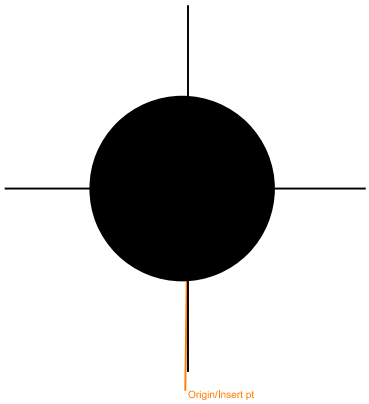
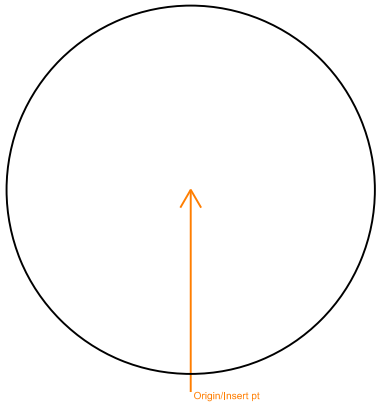
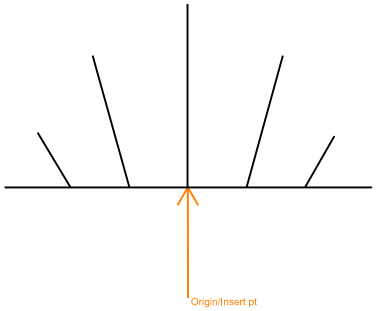
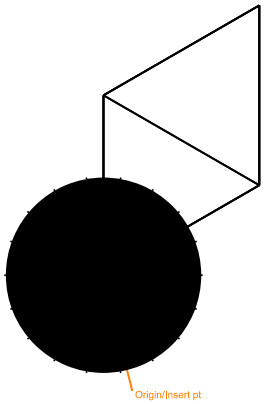
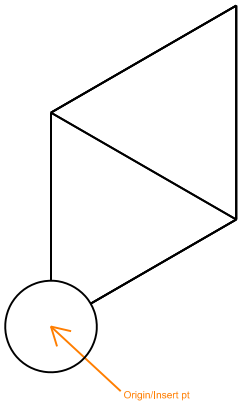
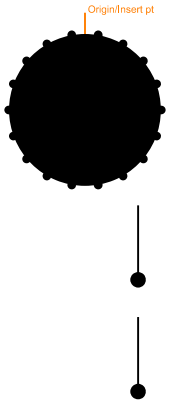
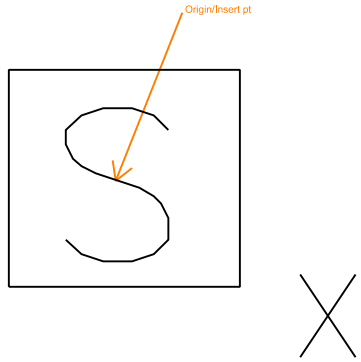
Survey/Mapping: STMPIT
STEAM PIT
Element type: Symbol

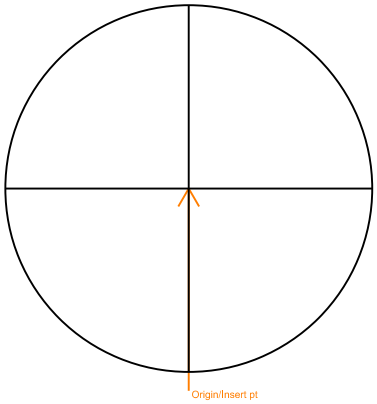


Survey/Mapping: STUMPS
SUBMERGED STUMPS
Element type: Symbol

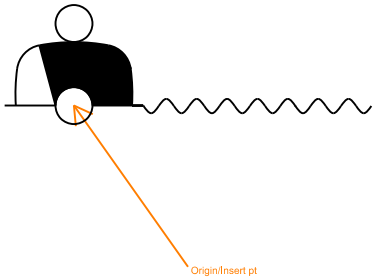


Survey/Mapping: SUBSTA
SUBSTATION
Element type: Symbol

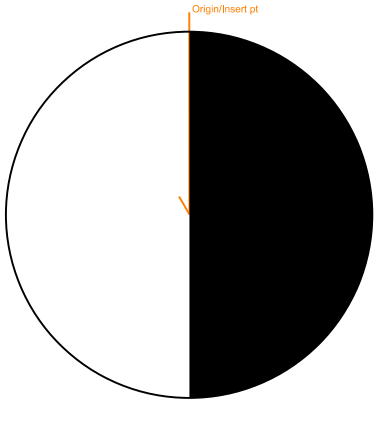
		
Survey/Mapping: SUPER SUPER BUOY Element type: Symbol	Survey/Mapping: SUWEL2 SUSPENDED WELL DEPTH UNKWN Element type: Symbol	Survey/Mapping: SUWEL3 SUSPENDED WELL DEPTH UNKWN Element type: Symbol
		
Survey/Mapping: SUWELY SUSPENDED WELL KNOWN DEPTH Element type: Symbol	Survey/Mapping: SWAMP SWAMP Element type: Symbol	Survey/Mapping: SWELB1 SUBMERGED WELL W BUOY Element type: Symbol
		
Survey/Mapping: SWELB2 SUBMERGED WELL W BUOY Element type: Symbol	Survey/Mapping: SWELL5 SUBMERGED PROD WELL Element type: Symbol	Survey/Mapping: SWPADX SWITCH_PAD_EXIST Element type: Symbol



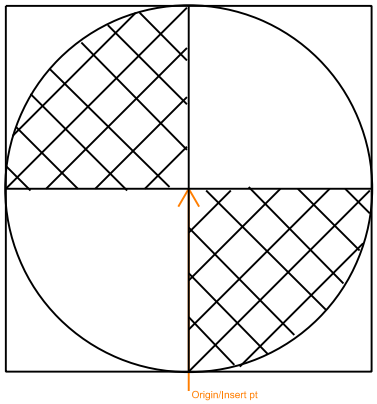
Survey/Mapping: TDZL
TOUCHDOWN ZONE LIGHT
Element type: Symbol



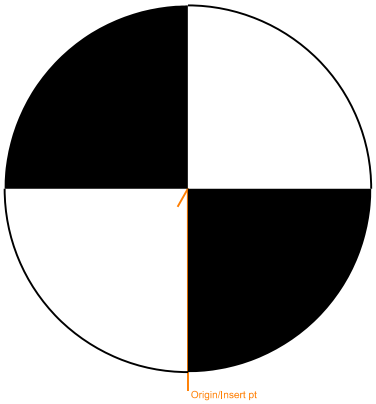
Survey/Mapping: TELBBB
TELEGRAPHIC BARREL BUOY BLK
Element type: Symbol



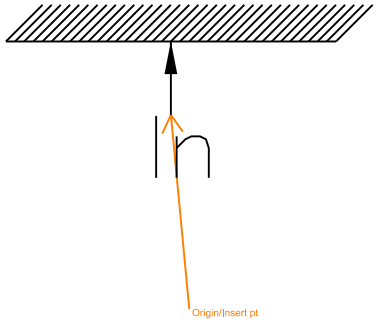
Survey/Mapping: THL
THRESHOLD LIGHT
Element type: Symbol



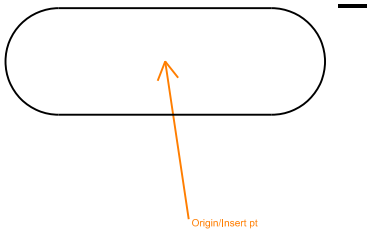
Survey/Mapping: TIDEG
TIDE GAGE
Element type: Symbol



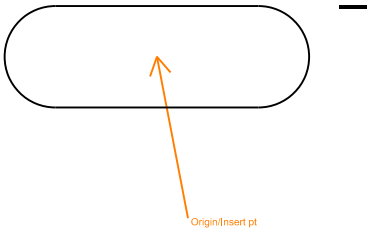
Survey/Mapping: TIDSTF
TIDESTAFF
Element type: Symbol



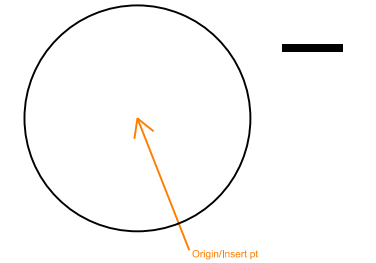
Survey/Mapping: TIRETR
TIRE TREDDLE
Element type: Symbol



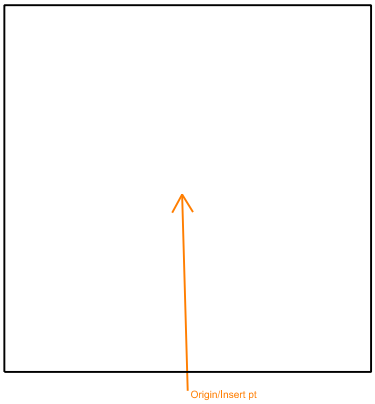
Survey/Mapping: TNKBG
TANK BELOW GROUND
Element type: Symbol



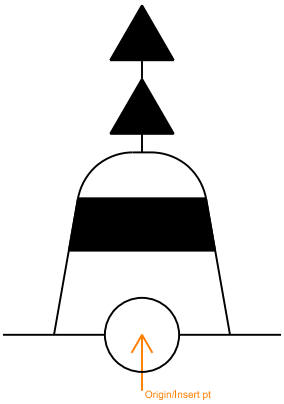
Survey/Mapping: TNKHAG
TANK HORIZ ABOVE GROUND
Element type: Symbol



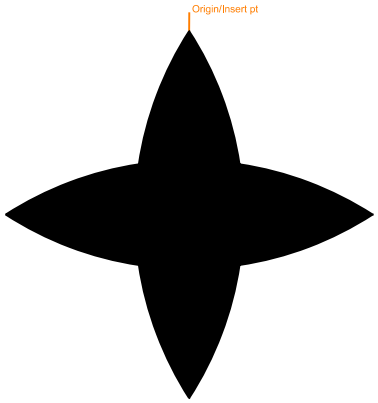
Survey/Mapping: TNKVAG
TANK VERTICAL ABOVE GROUND
Element type: Symbol



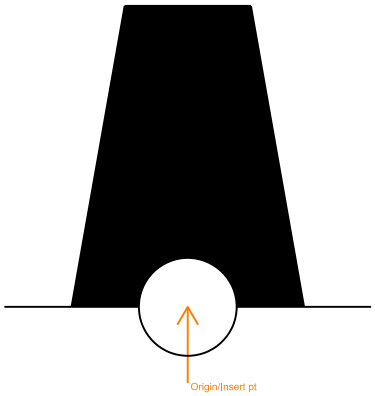
Survey/Mapping: TOW1
BEACON TOWER
Element type: Symbol



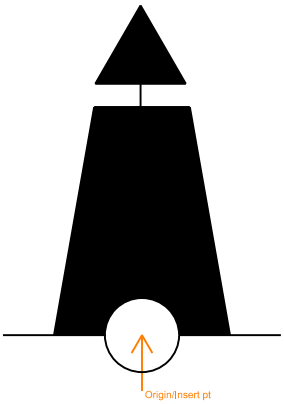
Survey/Mapping: TOW2
BEACON TOWER
Element type: Symbol



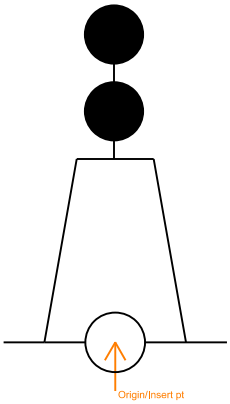
Survey/Mapping: TOW3
BEACON TOWER
Element type: Symbol



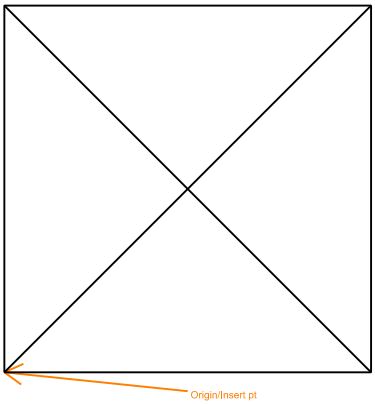
Survey/Mapping: TOWB
BLACK BEACON TOWER
Element type: Symbol



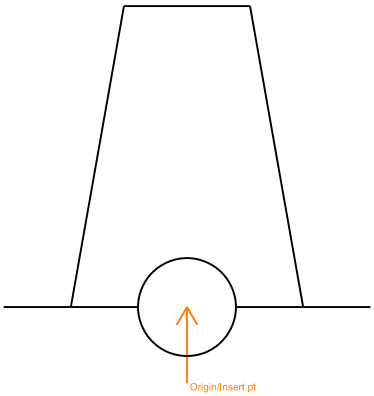
Survey/Mapping: TOWBT1
BLACK BEACON TOWER W TOP
Element type: Symbol



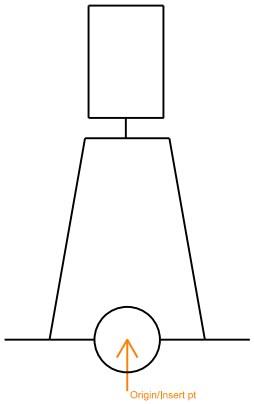
Survey/Mapping: TOWBT2
BLACK BEACON TOWER W TOP
Element type: Symbol



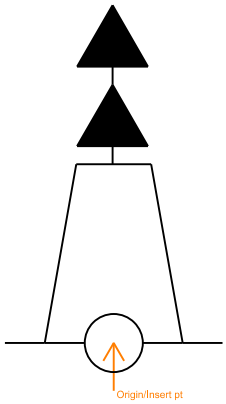
Survey/Mapping: TOWER
TRANSMISSION TOWER
Element type: Symbol



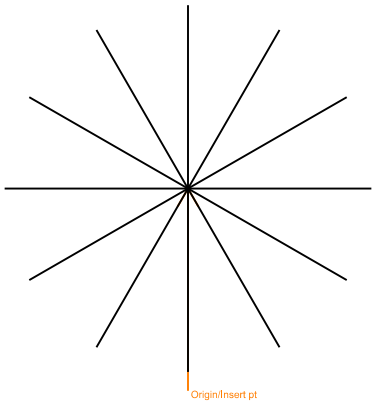
Survey/Mapping: TOWW
WHITE BEACON TOWER
Element type: Symbol



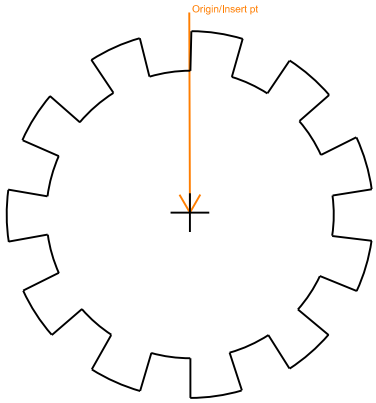
Survey/Mapping: TOWWT1
WHITE BEACON TOWER W TOP
Element type: Symbol



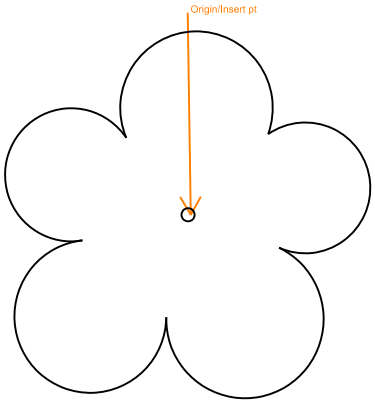
Survey/Mapping: TOWWT2
WHITE BEACON TOWER W T
Element type: Symbol



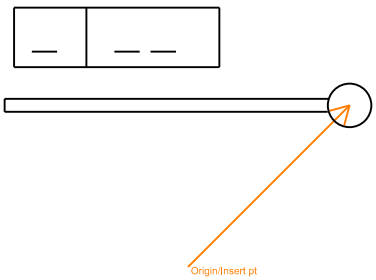
Survey/Mapping: TREEC
CONIFEROUS TREE
Element type: Symbol



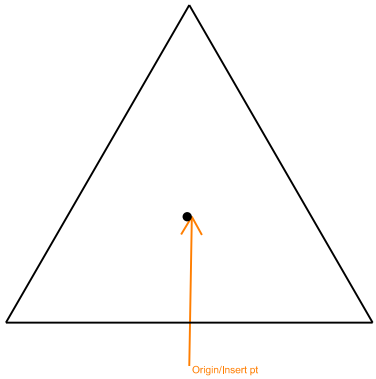
Survey/Mapping: TREED
DECIDUOUS TREE
Element type: Symbol



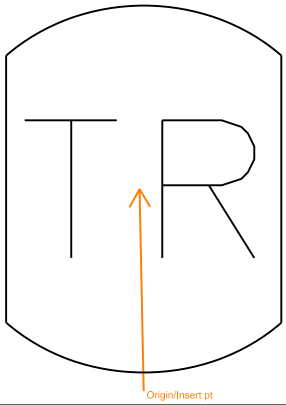
Survey/Mapping: TREEG
GENERIC TREE
Element type: Symbol



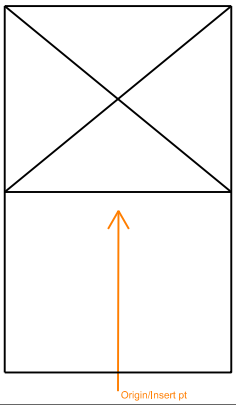
Survey/Mapping: TRFSIG
TRAFFIC SIGNAL MAST ARM
Element type: Symbol



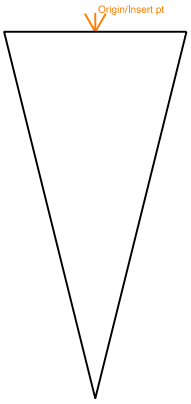
Survey/Mapping: TRIPNT
TRIANGULATION POINT
Element type: Symbol



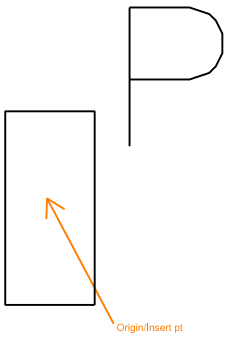
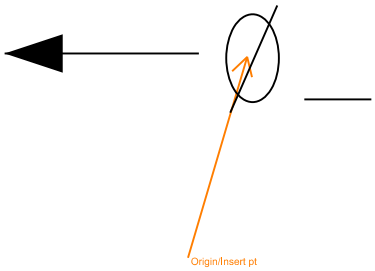
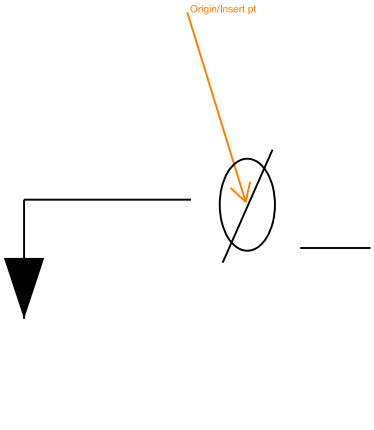
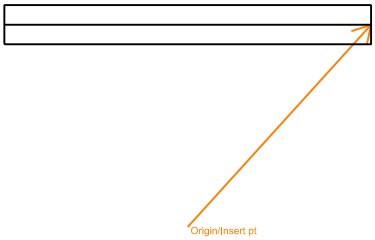
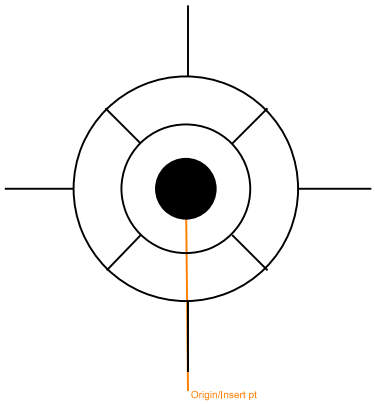
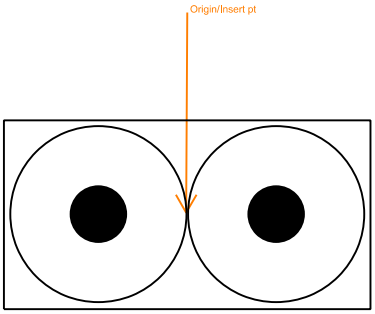
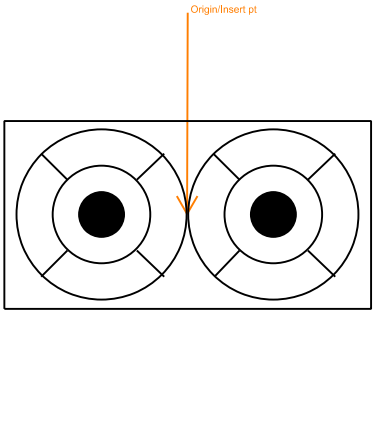
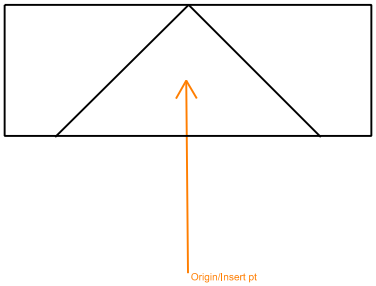
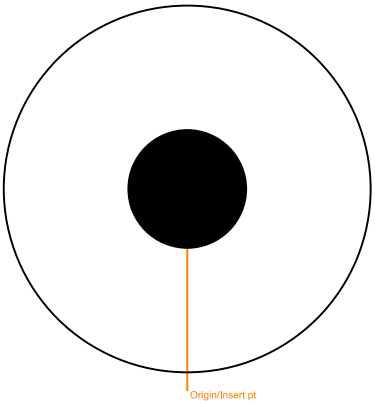
Survey/Mapping: TRVALT
TRANSFORMER VAULT
Element type: Symbol

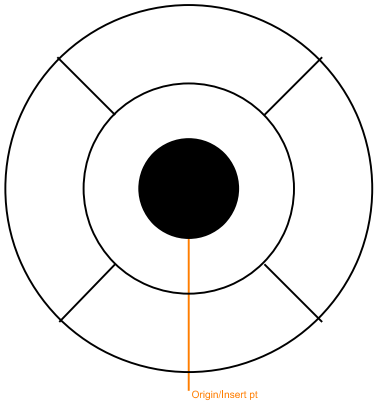
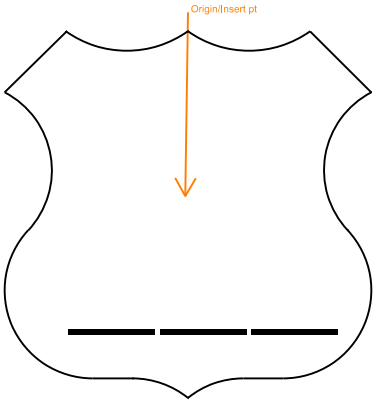
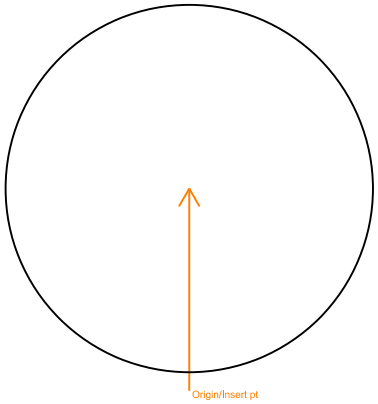
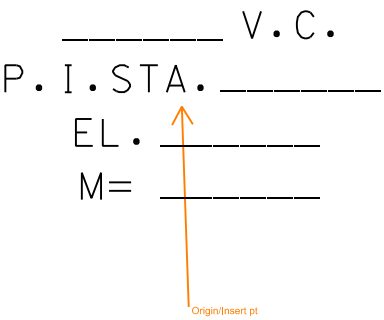
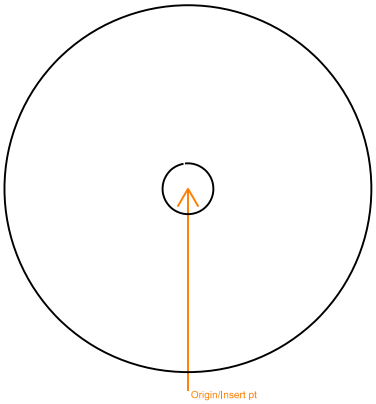
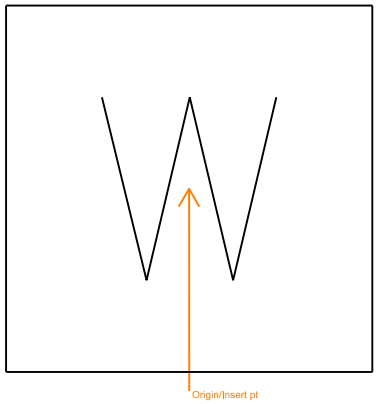
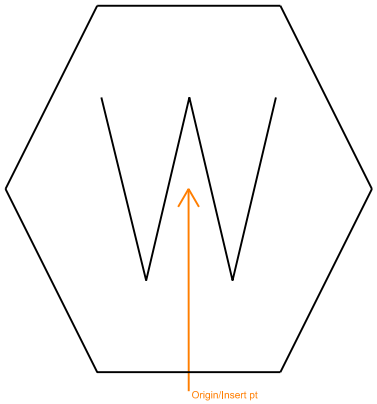
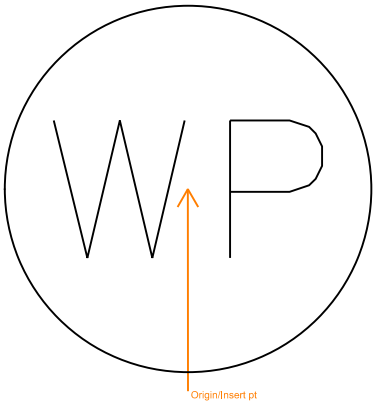
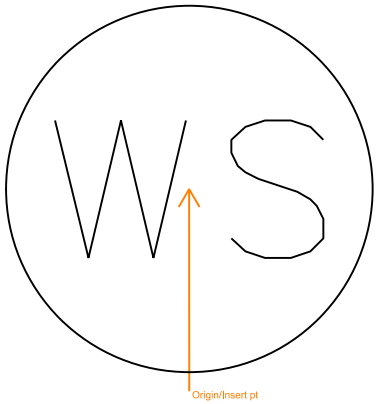


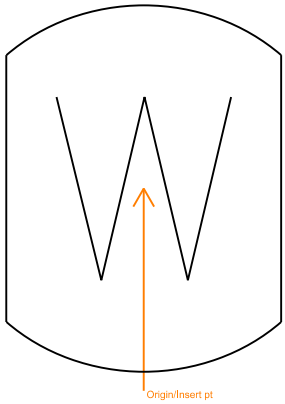
Survey/Mapping: TSCTRL
TR SIGNAL CONTROLLER
Element type: Symbol



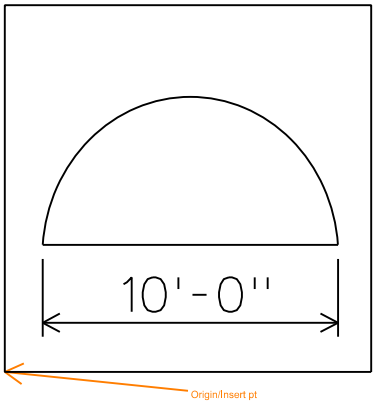
Survey/Mapping: TSHEAD
TRAFFIC SIGNAL HEAD
Element type: Symbol

		
Survey/Mapping: TSPBX TR SIGNAL PULLBOX Element type: Symbol	Survey/Mapping: TSPHS TR SIGNAL PH NO_THRU Element type: Symbol	Survey/Mapping: TSPHT TR SIGNAL PH NO_TURN Element type: Symbol
		
Survey/Mapping: TSVLDT TR SIGNAL VEH LOOP DETECTOR Element type: Symbol	Survey/Mapping: TWCLL TW CENTERLINE LIGHT Element type: Symbol	Survey/Mapping: TWELEL TW END LIGHT_ELEVATED Element type: Symbol
		
Survey/Mapping: TWELSF TW END LIGHT_SEMIFLUSH Element type: Symbol	Survey/Mapping: TWGSGN TW GUIDANCE SIGN Element type: Symbol	Survey/Mapping: TWLEL TW EDGE LIGHT_ELEVATED Element type: Symbol

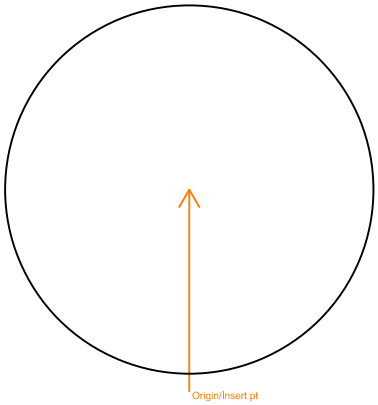
		
Survey/Mapping: TWLSF TW EDGE LIGHT_SEMIFLUSH Element type: Symbol	Survey/Mapping: USHWY US HIGHWAY SYMBOL Element type: Symbol	Survey/Mapping: UTPLX POLE_EXISTING Element type: Symbol
		
Survey/Mapping: VCDATA VERTICAL CURVE DATA Element type: Symbol	Survey/Mapping: VERCPT VERTICAL CONTROL POINT Element type: Symbol	Survey/Mapping: WAHHOL WATER HANDHOLE Element type: Symbol
		
Survey/Mapping: WAMETR WATER METER Element type: Symbol	Survey/Mapping: WAPLNT WATER PLANT Element type: Symbol	Survey/Mapping: WASOFT WATER SOFTENER Element type: Symbol



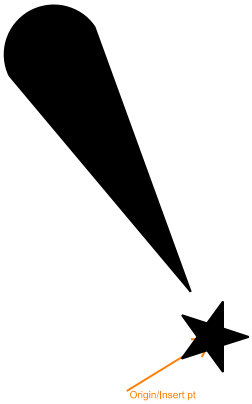
Survey/Mapping: WAVALT
WATER VALVE VAULT
Element type: Symbol



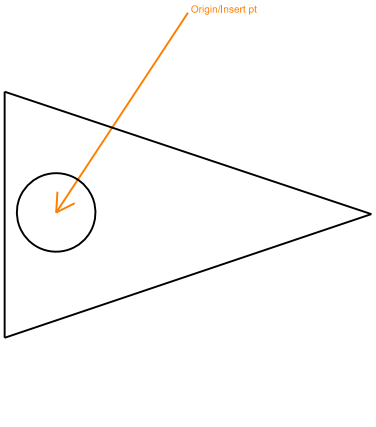
Survey/Mapping: WEIR
WEIR
Element type: Symbol



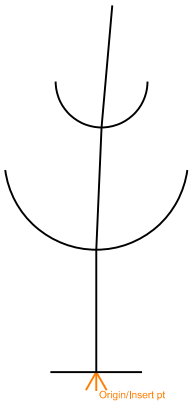
Survey/Mapping: WELL1
ABOVE WATER WELLHEAD
Element type: Symbol



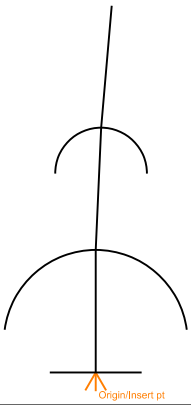
Survey/Mapping: WELL3
ABOVE WATER WELLHEAD
Element type: Symbol



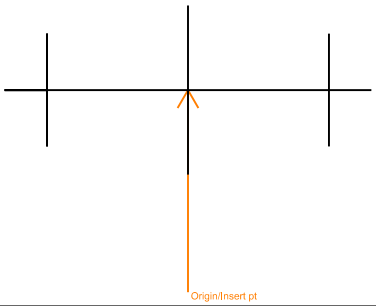
Survey/Mapping: WINDCN
WINDCONE
Element type: Symbol



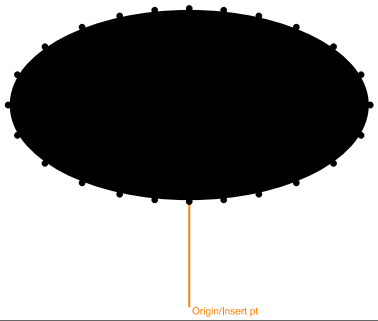
Survey/Mapping: WITHYP
PORT HAND WITHY
Element type: Symbol



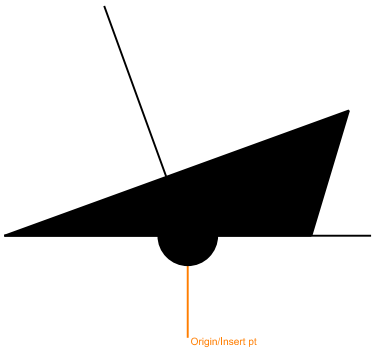
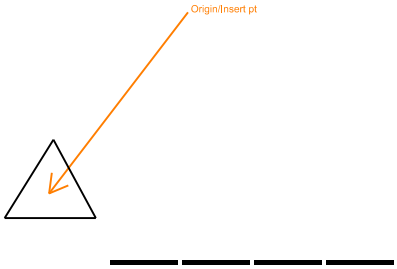
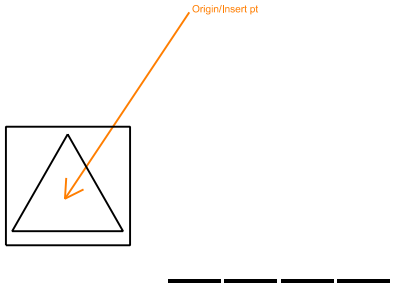
Survey/Mapping: WITHYS
STARBOARD HAND WITHY
Element type: Symbol



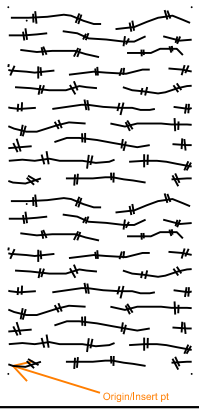
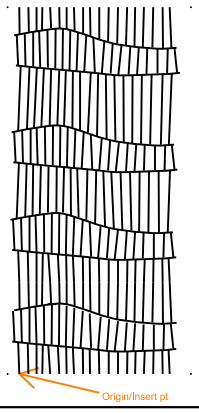
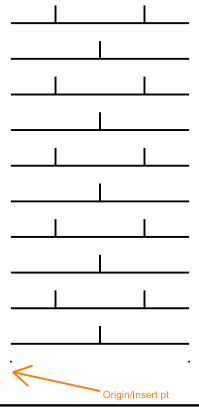
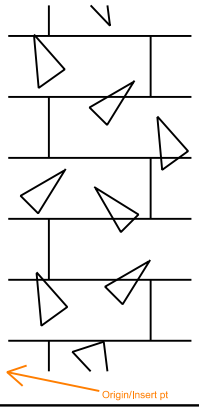
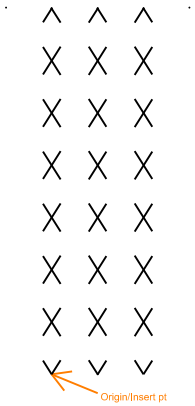
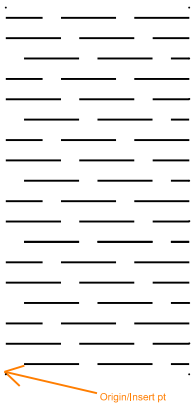
Survey/Mapping: WRECK
WRECK NOT DANGEROUS
Element type: Symbol

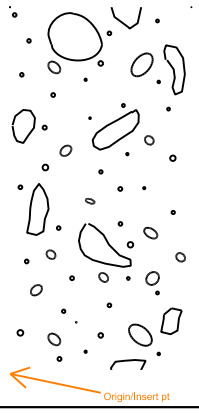
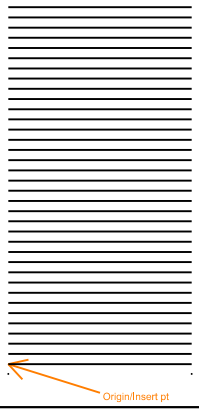
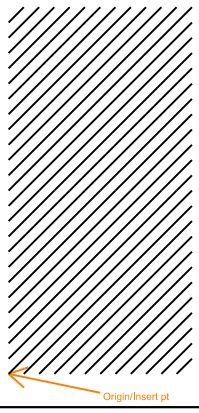


Survey/Mapping: WRKDNG
DANGER WRECK DEPTH UNKNOWN
Element type: Symbol

		
Survey/Mapping: WRKEXP WRECK PARTLY EXPOSED Element type: Symbol	Survey/Mapping: XFRPLX XFMR_POLE_EXIST Element type: Symbol	Survey/Mapping: XFRPMX XFMR_PAD_EXIST Element type: Symbol

4 Geotechnical Patterns Library

		
Geotechnical: AGGLOM AGGLOMERATE FLOW BRECCIA Element type: Pattern	Geotechnical: ANDES ANDESITE Element type: Pattern	Geotechnical: BASALT BASALT Element type: Pattern
		
Geotechnical: BRECCA BRECCIA Element type: Pattern	Geotechnical: CHALK CHALK OR MARL Element type: Pattern	Geotechnical: CHERT CHERT Element type: Pattern
		
Geotechnical: CLAYST CLAYSTONE OR SILTSTONE Element type: Pattern	Geotechnical: CMPSHL COMPACTION SHALE Element type: Pattern	Geotechnical: COAL COAL Element type: Pattern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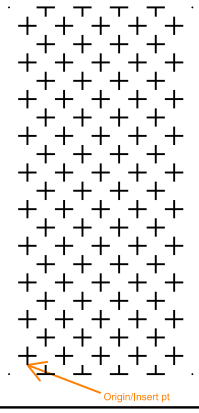	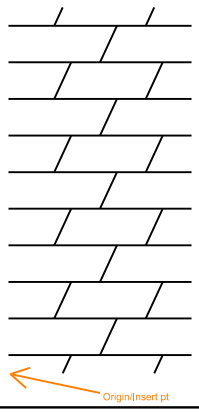	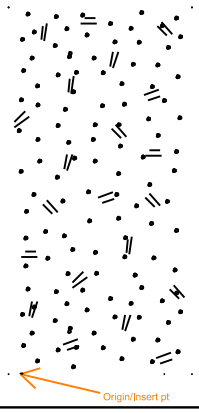
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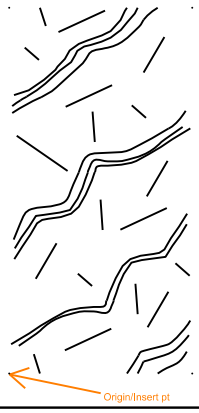	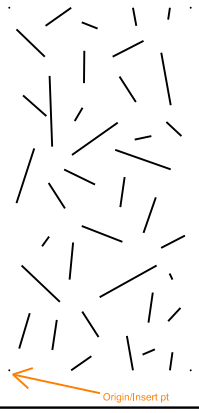	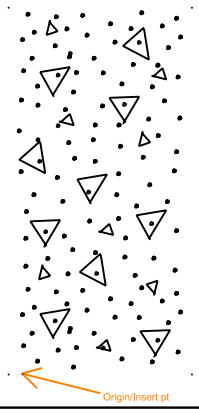
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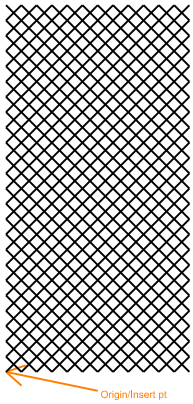	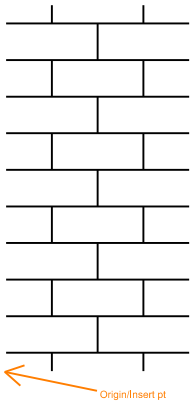	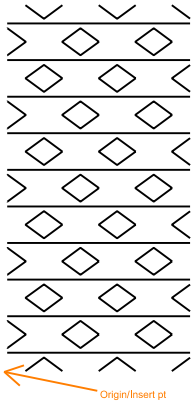
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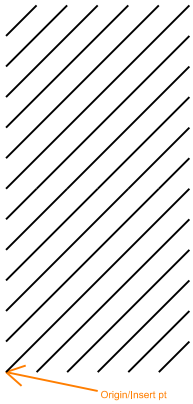	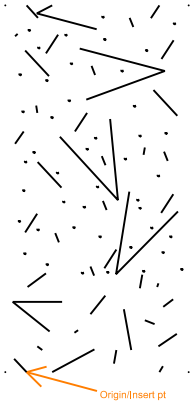	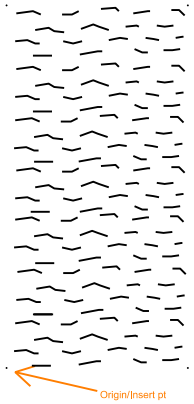
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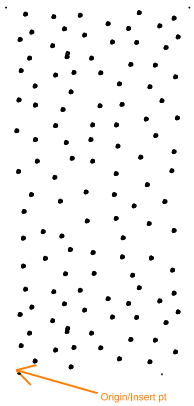		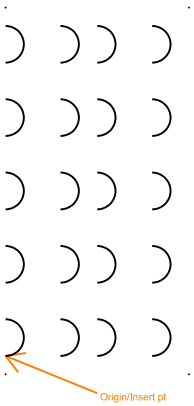
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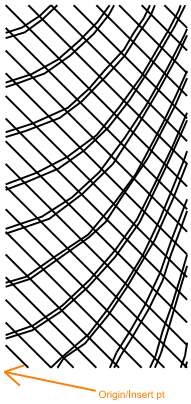	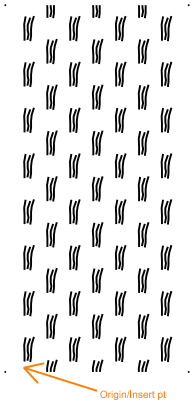	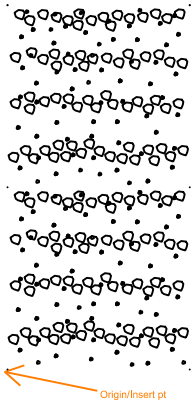
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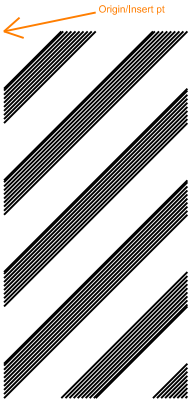
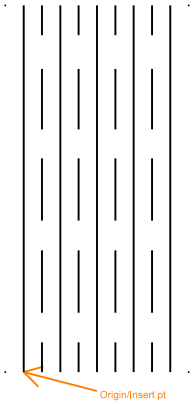
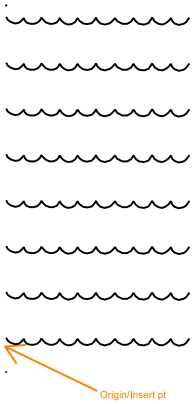
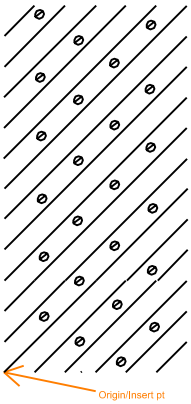
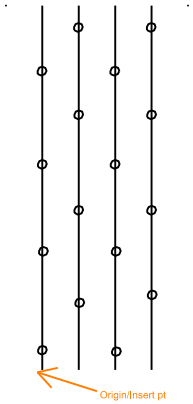
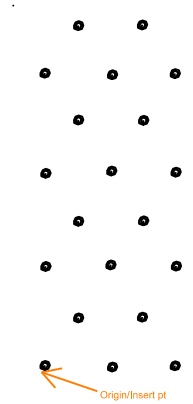
		
Geotechnical: USCS1 OL ORGANIC CLAY OR SILT LOW Element type: Pattern	Geotechnical: USCS10 OL ORGANIC CLAY OR SILT LOW Element type: Pattern	Geotechnical: USCS11 PT PEAT Element type: Pattern
		
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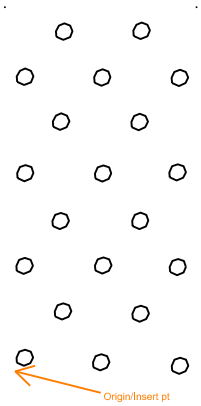	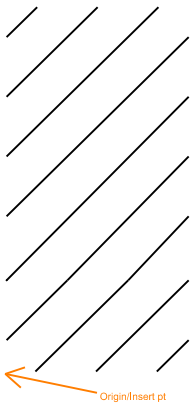	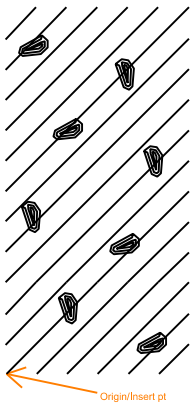
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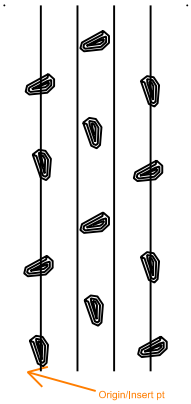
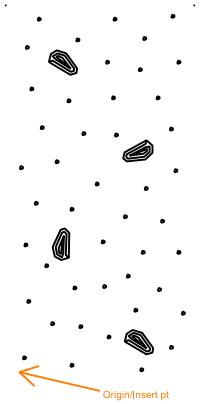
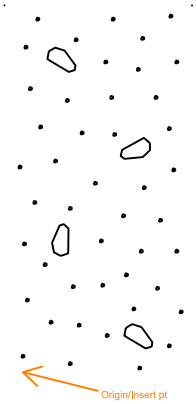
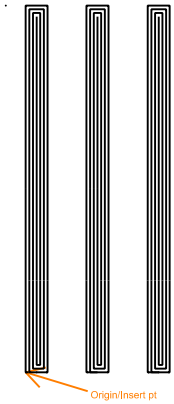
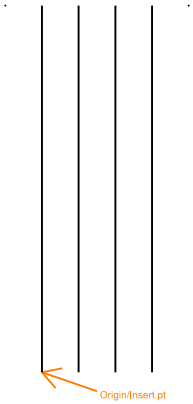
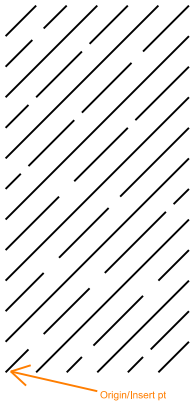
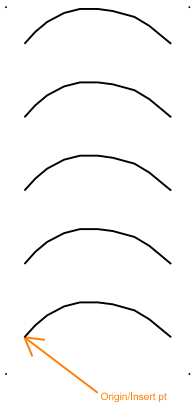
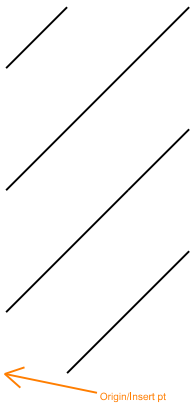
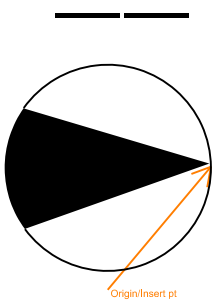
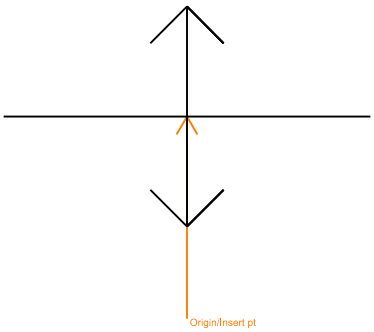
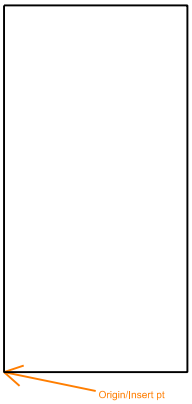
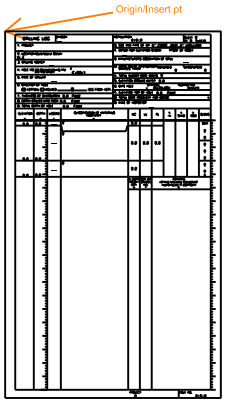
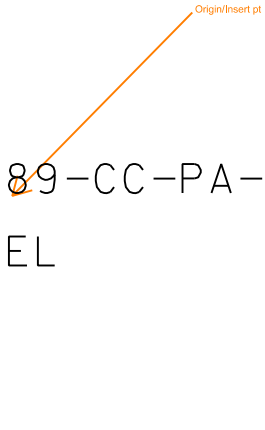
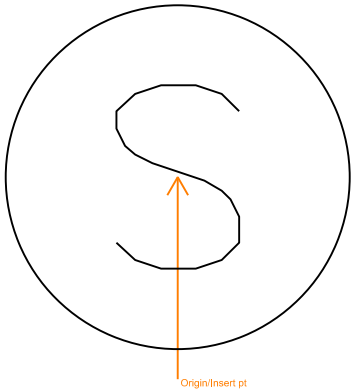
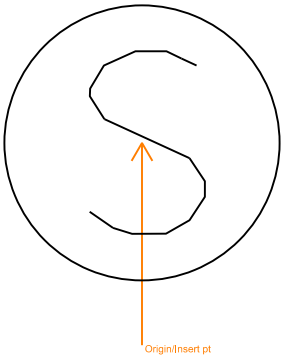
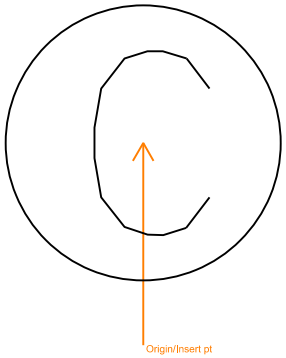
		
Geotechnical: USCS4 GM SILTY GRAVEL Element type: Pattern	Geotechnical: USCS5 GP POORLY GRADED GRAVEL Element type: Pattern	Geotechnical: USCS6 GW WELL GRADED GRAVEL Element type: Pattern
		
Geotechnical: USCS7 MH INORGANIC SILT HIGH LIQU Element type: Pattern	Geotechnical: USCS8 ML INORGANIC SILT LOW LIQUI Element type: Pattern	Geotechnical: USCS9 OH ORGANIC CLAY OR SILT HIG Element type: Pattern

		
Geotechnical: WOOD WOOD SYMBOL Element type: Pattern	Geotechnical: WSJNT WIDELY SPACED JOINTS Element type: Pattern	Geotechnical: ZONECL ZONES OF CORE LOSS Element type: Pattern

4 Geotechnical Symbols Library

		
Geotechnical: ANCHOL ANG CORED HOLE AR EQ D Element type: Symbol	Geotechnical: ANTICL ANTICLINE Element type: Symbol	Geotechnical: BHHNUM BACKHOE HOLE NUMBER Element type: Symbol
		
Geotechnical: BOLOGR BORING LOG REFUSAL Element type: Symbol	Geotechnical: BORLOG BORING LOG SHEET SCALE1TO1 Element type: Symbol	Geotechnical: CCHNUM CONCRETE CORE HOLE NO. Element type: Symbol
		
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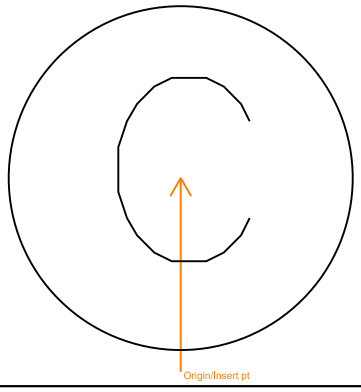
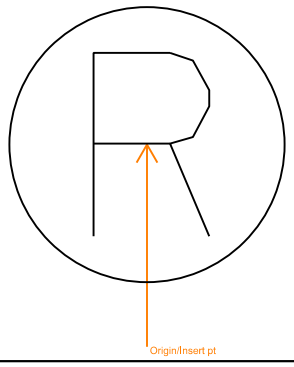
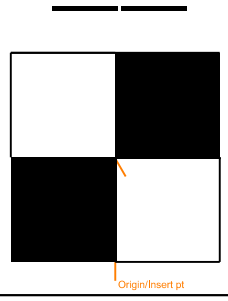


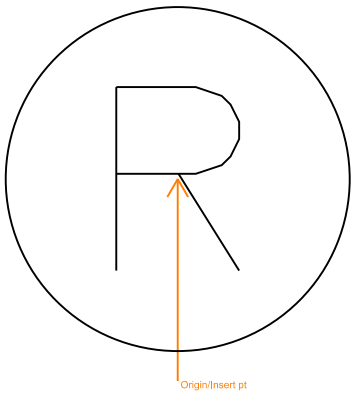
Geotechnical: CONTST
CONSOLIDATION TEST
Element type: Symbol



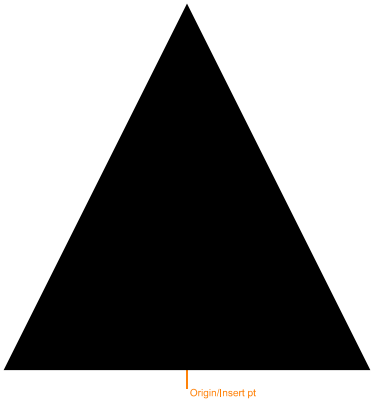
Geotechnical: CONUDR
CONSOLIDATED UNDRAINED
Element type: Symbol



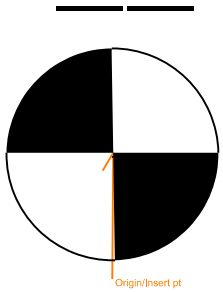
Geotechnical: CPNHOL
CONE PENETROMETER HOLE
Element type: Symbol



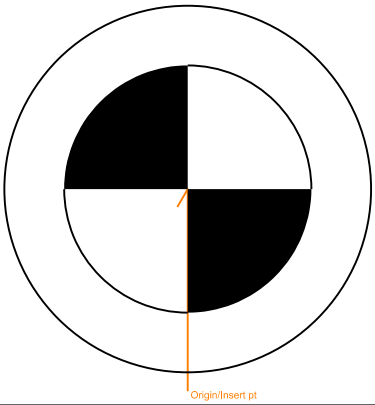
Geotechnical: CUDRTT
CONSOL UNDRND TRIAXIAL TEST
Element type: Symbol



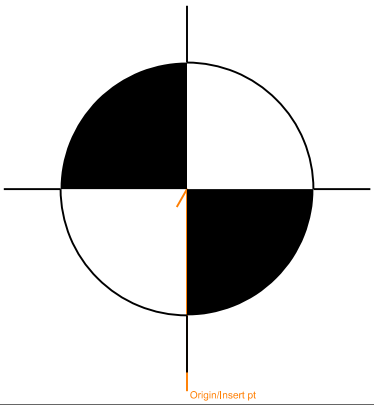
Geotechnical: DSCHIC
BORING WITH INCLINOMETER
Element type: Symbol



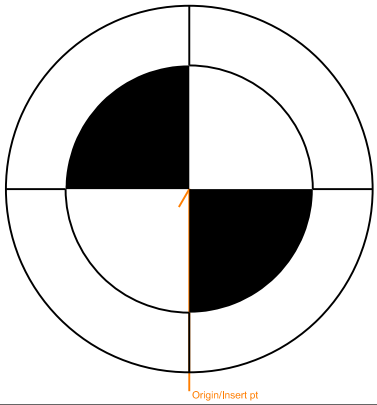
Geotechnical: DSCHOL
DRIVE SAMPLED SPT AND COR
Element type: Symbol



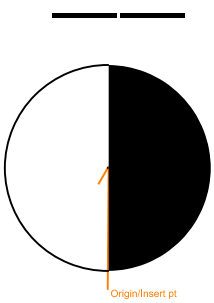
Geotechnical: DSCHPT
DR SAMP SPT AND COR HYDR PRESS TESTED
Element type: Symbol



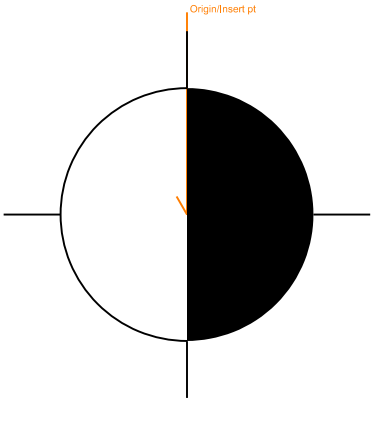
Geotechnical: DSCHPZ
DR SAMP SPT AND COR WITH PIEZOMETER
Element type: Symbol



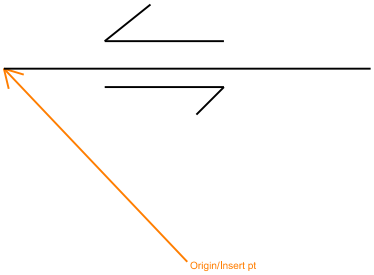
Geotechnical: DSCPZT
DR SAMP SPT COR HYDR PRESS TST PZMTR
Element type: Symbol



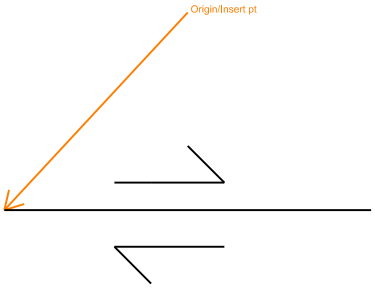
Geotechnical: DSHOL
DRIVE SAMPLE SPT HOLE
Element type: Symbol



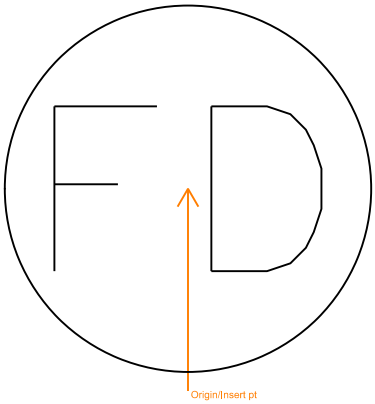
Geotechnical: DSHPZ
DISTURB SAMP BORING WITH PIEZOMETER
Element type: Symbol



Geotechnical: FBLCK1
FAULT BLOCK MOVEMENT 1
Element type: Symbol

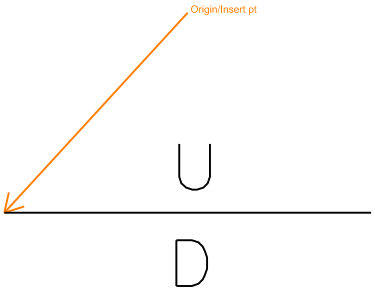


Geotechnical: FBLCK2
FAULT BLOCK MOVEMENT 2
Element type: Symbol

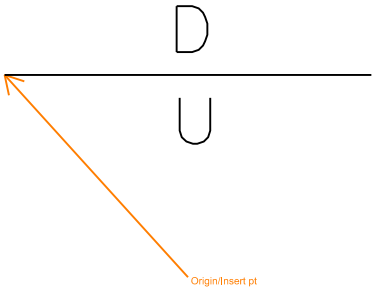


Geotechnical: FDRAIN
FOUNDATION DRAIN
Element type: Symbol

Geotechnical: HAHNUM
HAND AUGER HOLE NUMBER
Element type: Symbol

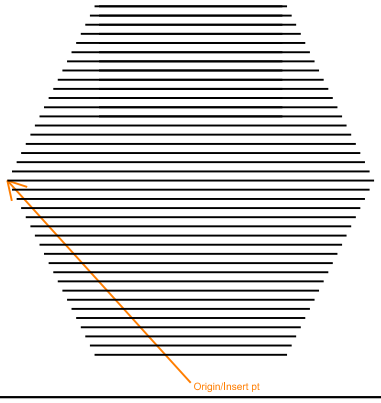
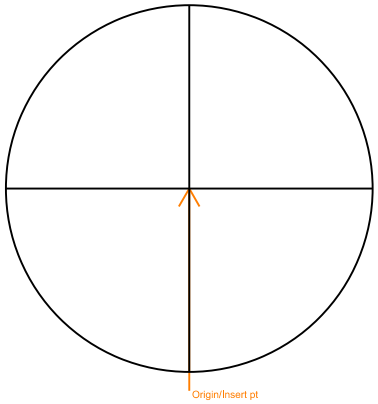
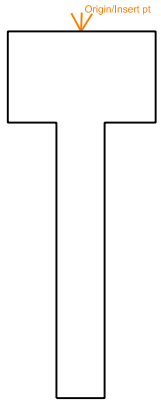
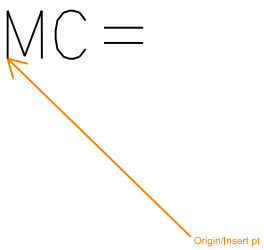
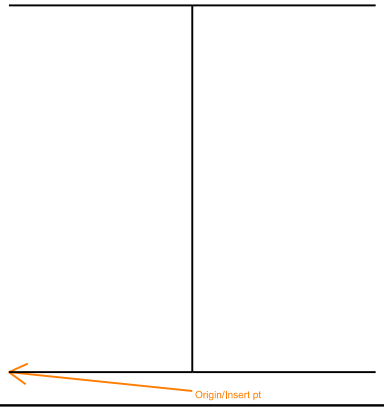
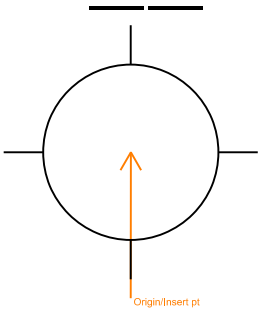
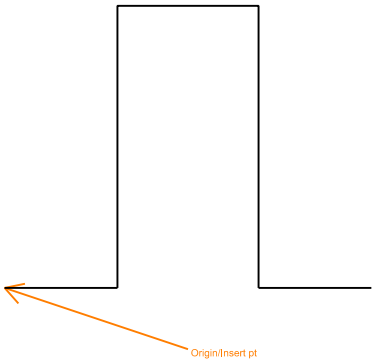


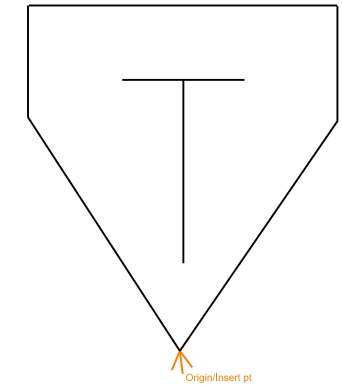
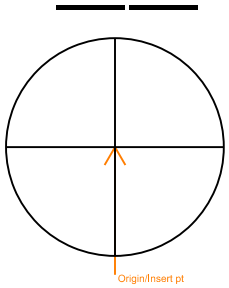
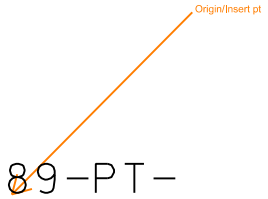
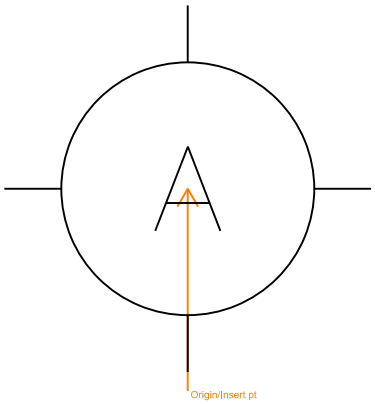
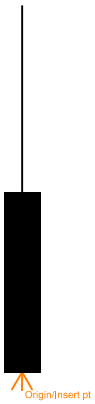
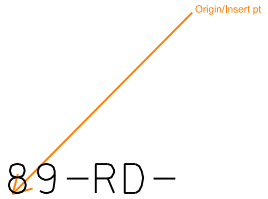
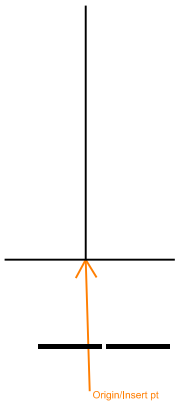
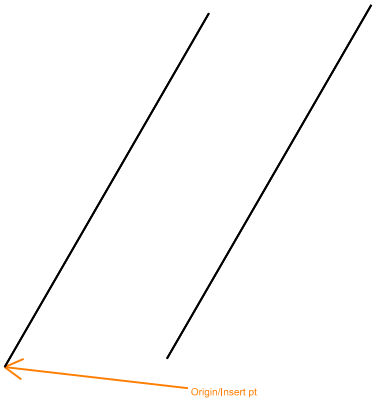
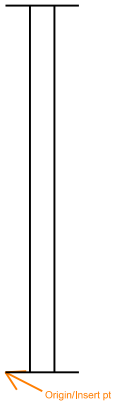
Geotechnical: HANGF1
HIGH ANGLE FAULT 1
Element type: Symbol

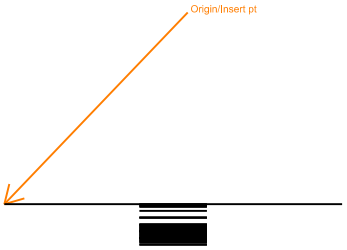
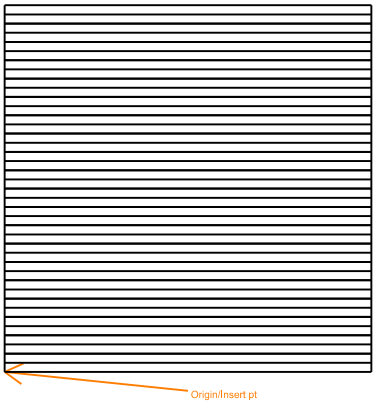
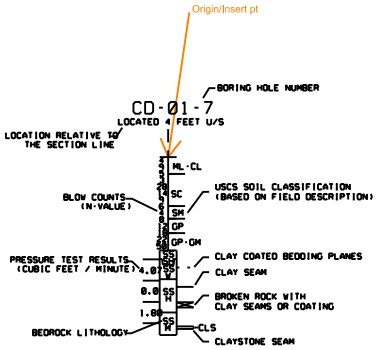
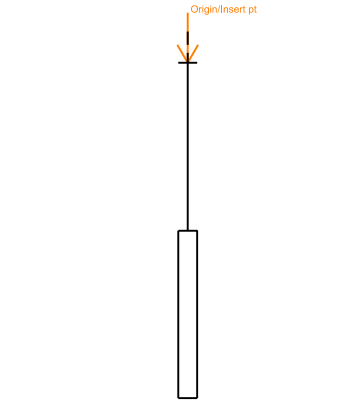
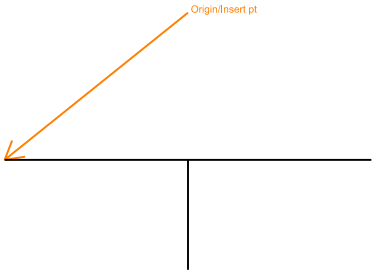
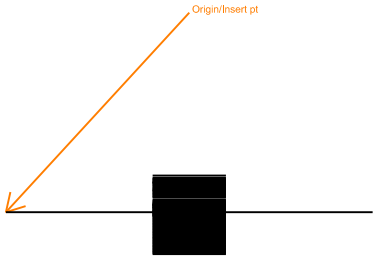
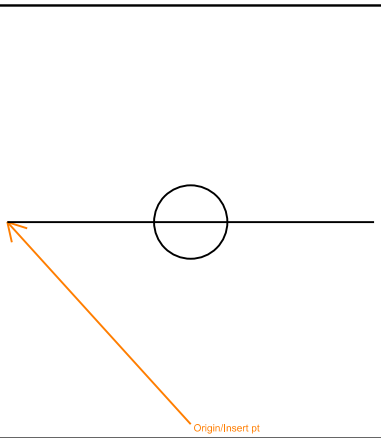
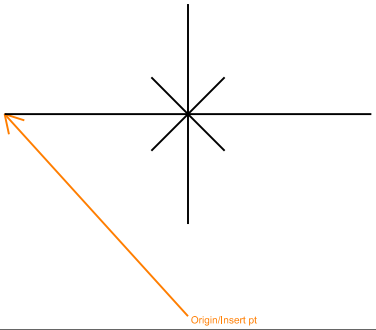


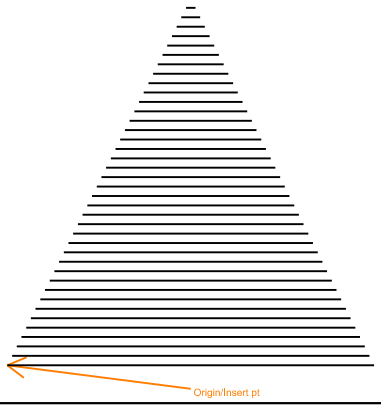
Geotechnical: HANGF2
HIGH ANGLE FAULT 2
Element type: Symbol

Geotechnical: HDHNUM
HAND DUG HOLE NUMBER
Element type: Symbol

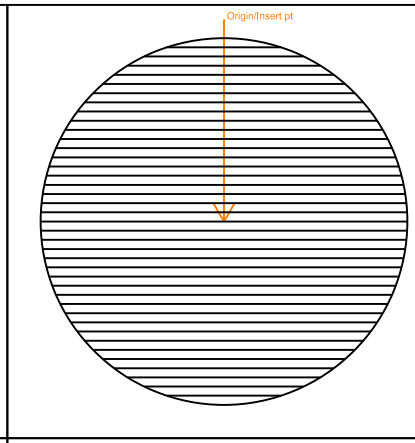
		
Geotechnical: HEXAGN HEXAGON SYMBOL Element type: Symbol	Geotechnical: HOLNUM HOLE NUMBER ELEVATION Element type: Symbol	Geotechnical: HRZBED HORIZONTAL BEDS Element type: Symbol
		
Geotechnical: ICCSNG INCLINOMETER CASING Element type: Symbol	Geotechnical: MOISTC MOISTURE CONTENT Element type: Symbol	Geotechnical: NSAHOL NONSAMPLED AREA OF HOL Element type: Symbol
		
Geotechnical: OBSHOL PIEZOMETER OR OBSERVAT HOLE Element type: Symbol	Geotechnical: OPBLOG OPEN BORING LOG Element type: Symbol	Geotechnical: PAHNUM POWER AUGER HOLE NUMBER Element type: Symbol

		
Geotechnical: PIEZOM PIEZOMETER Element type: Symbol	Geotechnical: PROPEX PROPOSED EXPLORATION Element type: Symbol	Geotechnical: PTHNUM PERC TEST HOLE NUMBER Element type: Symbol
		
Geotechnical: PZABD PIEZOMETER ABANDONED Element type: Symbol	Geotechnical: PZUNIT PIEZOMETER SENSING UNIT Element type: Symbol	Geotechnical: RDHNUM ROTARY DRILL HOLE NUMBER Element type: Symbol
		
Geotechnical: RFWELL RELIEF WELL Element type: Symbol	Geotechnical: RSLASH REFUSAL SLASHES Element type: Symbol	Geotechnical: SAMPLE SAMPLE Element type: Symbol

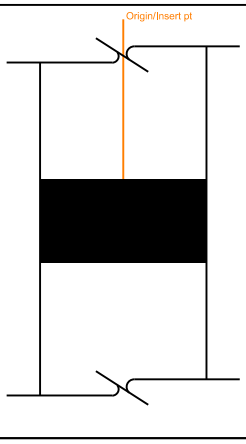
		
Geotechnical: SDIJNT STRIKE DIP OF INCLINED Element type: Symbol	Geotechnical: SQUARE SQUARE SYMBOL Element type: Symbol	Geotechnical: STKLNG STICKLOG LEGEND DETAIL Element type: Symbol
		
Geotechnical: STKLOG STICKLOG Element type: Symbol	Geotechnical: STRKDP STRIKE DIP Element type: Symbol	Geotechnical: STRKVJ STRIKE OF VERTICAL JOI Element type: Symbol
		
Geotechnical: STRKVP STRIKE W VERTICAL DIP Element type: Symbol	Geotechnical: SYNCLN SYNCLINE Element type: Symbol	Geotechnical: TPIOB TEST PIT IN OVERBURDEN Element type: Symbol



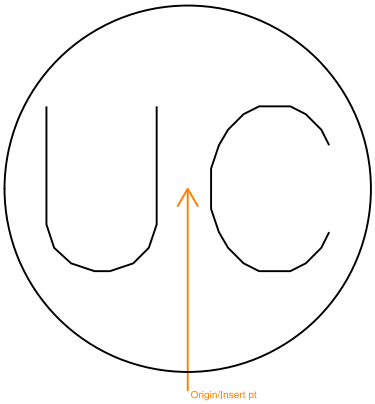
Geotechnical: TRIANG
TRIANGLE SYMBOL
Element type: Symbol



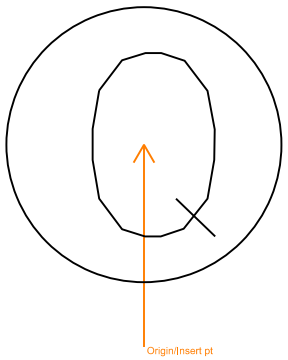
Geotechnical: TSTHOL
TEST HOLE SYMBOL
Element type: Symbol



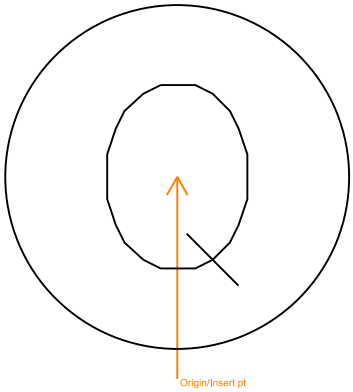
Geotechnical: TTIOB
TEST TRENCH IN OVERBURDEN
Element type: Symbol



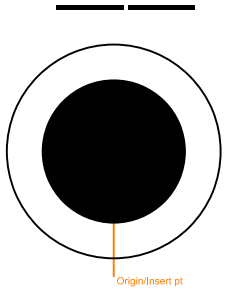
Geotechnical: UCELL
UPLIFT CELL
Element type: Symbol



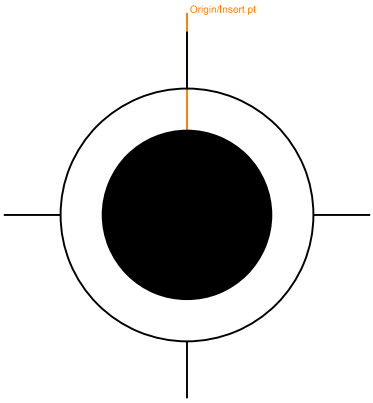
Geotechnical: UCONUD
UNCONSOLIDATED UNDRAINED
Element type: Symbol



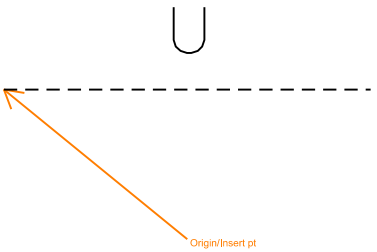
Geotechnical: UCONUT
UNCONSOL UNDRND TAXIAL TEST
Element type: Symbol



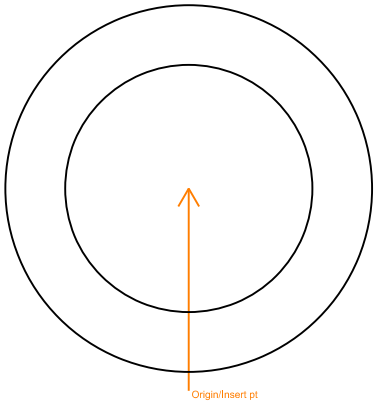
Geotechnical: UDENIS
UNDISTURBED DENISON OR PUSH
Element type: Symbol



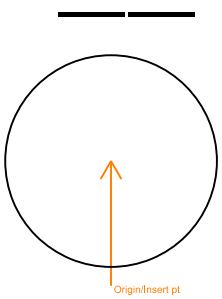
Geotechnical: UDUNPZ
UNDISTURBED SAMP BORING PIEZOMETER
Element type: Symbol



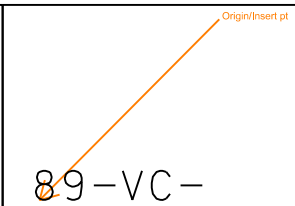
Geotechnical: ULIMIT
UNSATISFACTORY LIMIT
Element type: Symbol



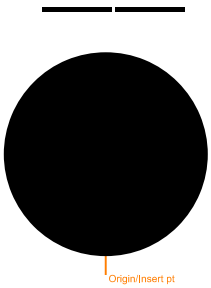
Geotechnical: VCHHPT
VERTICAL CORE HOLE HYDR PRESS TESTED
Element type: Symbol



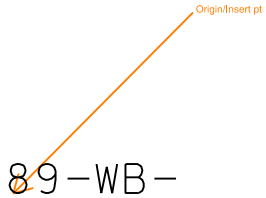
Geotechnical: VCHOL
VERTICAL CORE HOLE
Element type: Symbol



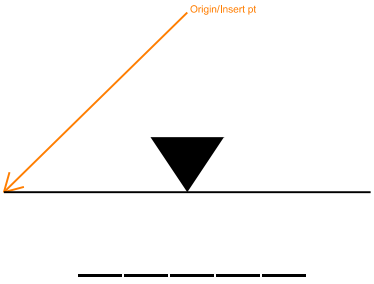
Geotechnical: VHNUM
VIBRACORE HOLE NUMBER
Element type: Symbol



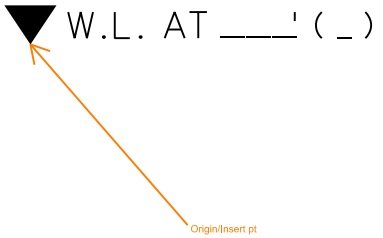
Geotechnical: WASHBR
WASHBORED
Element type: Symbol



Geotechnical: WBHNUM
WASH BORING HOLE NUMBER
Element type: Symbol

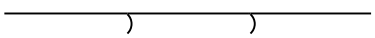
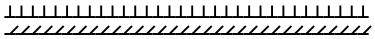
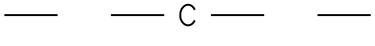
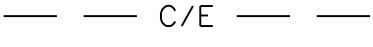


Geotechnical: WLEVDL
WATER LEVEL DATA LEFT
Element type: Symbol

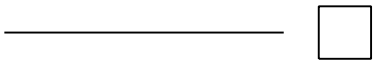
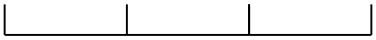
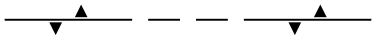
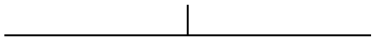


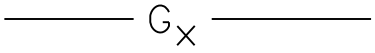
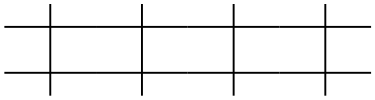
Geotechnical: WTRLEV
WATER LEVEL
Element type: Symbol

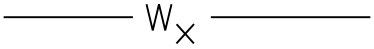
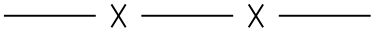
5 Civil Lines Library

		
Civil: BANKLF BANK LEFT Element type: Line	Civil: BANKRT BANK RIGHT Element type: Line	Civil: BARDIT DITCH BARRIER Element type: Line
		
Civil: BARDTB DITCH AND BEAM BARRIER Element type: Line	Civil: BARGEN GENERIC SECURITY BARRIER Element type: Line	Civil: BARMAS SECURITY MASONRY BARRIER Element type: Line
		
Civil: COMUGN NEW COMMUNICATION UNDERG Element type: Line	Civil: CONEMT CONSTRUCTION EASEMENT Element type: Line	Civil: CONLMT CONSTRUCTION LIMIT Element type: Line

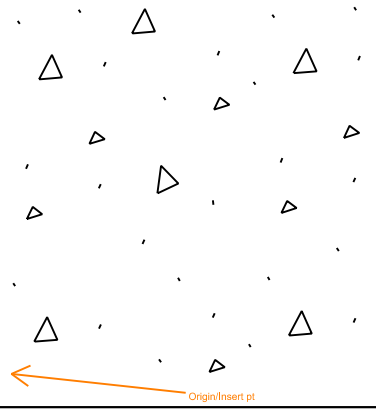
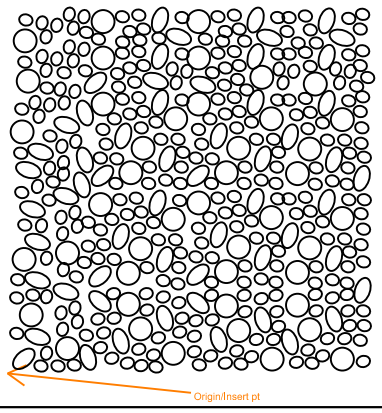
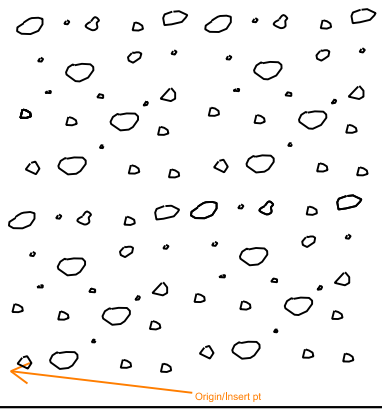
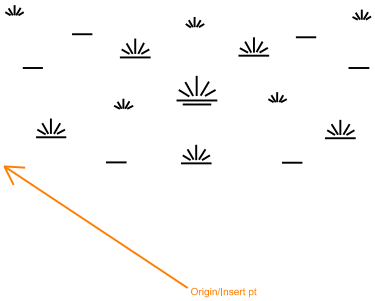
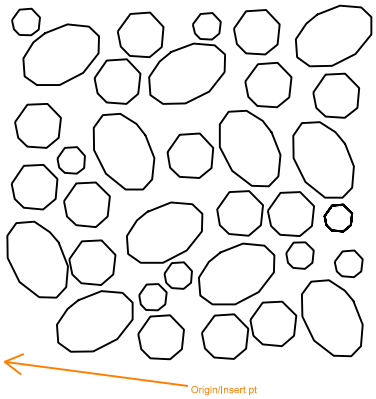
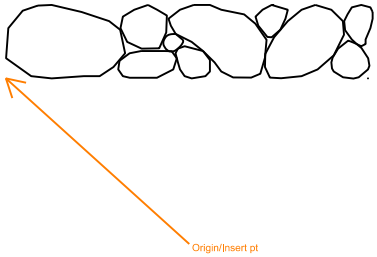
Civil: CULVRT CULVERT PIPE Element type: Line	Civil: DITCH DITCH LINE Element type: Line	Civil: EPUGN NEW ELEC UNDERG PRIMARY Element type: Line
Civil: FENCE FENCE Element type: Line	Civil: FIRE FIRE PROTECTION WATR SUPPLY Element type: Line	Civil: FUELOR FUEL OIL RETURN Element type: Line
Civil: FUELOS FUEL OIL SUPPLY Element type: Line	Civil: FUELOV FUEL OIL TANK VENT Element type: Line	Civil: GOVTKL GOVERNMENT TAKING LINE Element type: Line

		
Civil: GUARD GUARD RAIL Element type: Line	Civil: INDXDC INDEX DEPTH CONTOUR Element type: Line	Civil: IWASTE INDUSTRIAL WASTE Element type: Line
		
Civil: LEVEE LEVEE NEW Element type: Line	Civil: LEVERP LEVEE TO BE REPAIRED Element type: Line	Civil: LIQPET LIQUID PETROLEUM GAS Element type: Line
		
Civil: MINRDC MINOR DEPTH CONTOUR Element type: Line	Civil: NONPOT NONPOTABLE WATER Element type: Line	Civil: NTGASN NATURAL GAS Element type: Line

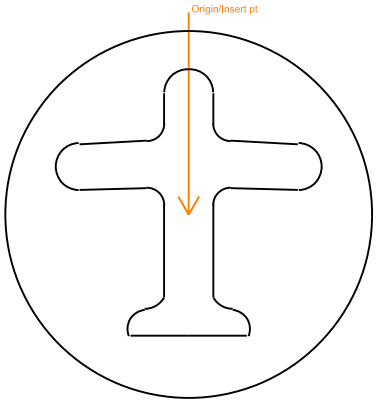
		
Civil: NTGASX EXIST NATURAL GAS Element type: Line	Civil: PROJBL PROJECT BOUNDARY LINE Element type: Line	Civil: PROPL PROPERTY LINE Element type: Line
		
Civil: RAILRD RAILROAD Element type: Line	Civil: RTOFWY RIGHT OF WAY Element type: Line	Civil: SILT SILT FENCE Element type: Line
Civil: SSILT SUPER SILT FENCE Element type: Line	Civil: SSWAF SANITARY SEWER Element type: Line	Civil: SSWAFX EXISTING SANITARY SEWER Element type: Line

Civil: STRAF STORM DRAIN Element type: Line	Civil: STRAFX EXISTING STORM DRAIN Element type: Line	Civil: TREEL TREE LINE Element type: Line
		
Civil: WATERL WATER LINE Element type: Line	Civil: WATRX EXISTING WATER LINE Element type: Line	Civil: WWFBRC WELDED WIRE FABRIC Element type: Line

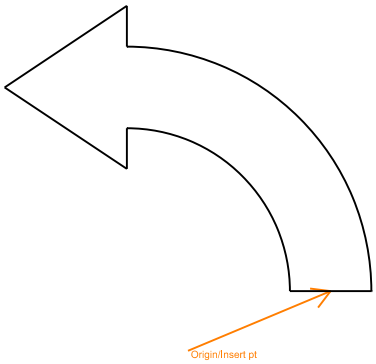
5 Civil Patterns Library

		
Civil: CONCST CONCRETE STONE Element type: Pattern	Civil: FILTBD FILTRATION BED Element type: Pattern	Civil: GRAVEL GRAVEL Element type: Pattern
		
Civil: LSWAMP LARGE SWAMP Element type: Pattern	Civil: POROUS POROUS Element type: Pattern	Civil: RIPRAP RIPRAP PATTERN Element type: Pattern

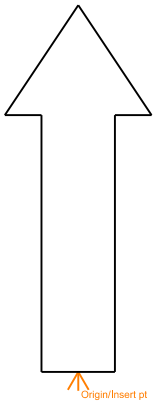
5 Civil Symbols Library



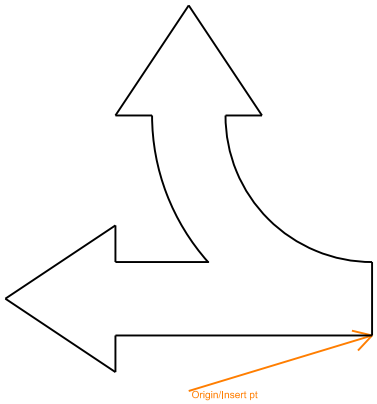
Civil: AIRFLD
AIRFIELD SYMBOL
Element type: Symbol



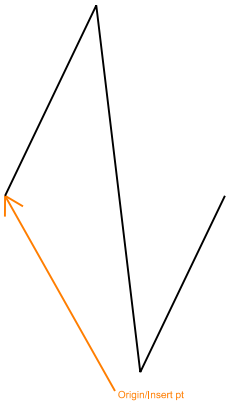
Civil: ARRPT
PARKING TURN ARROW
Element type: Symbol



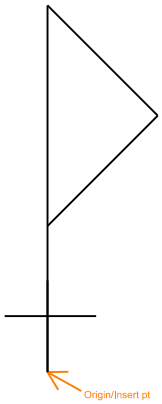
Civil: ARRSD
STRAIGHT DIRECTION ARROW
Element type: Symbol



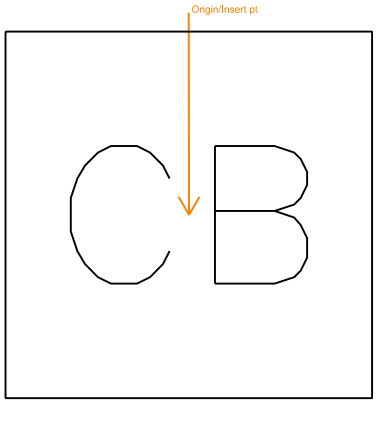
Civil: ARRST
STRAIGHT AND TURN ARROW
Element type: Symbol



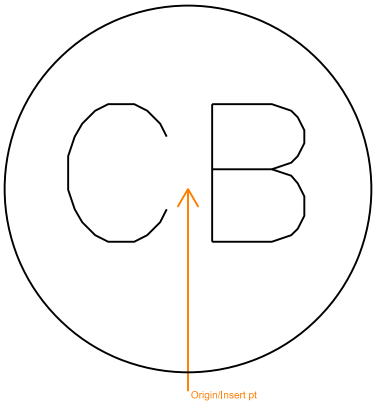
Civil: BREAK
BREAK LINE SYMBOL
Element type: Symbol



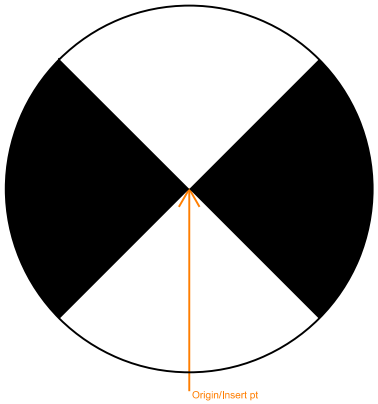
Civil: BUOY
BUOY
Element type: Symbol



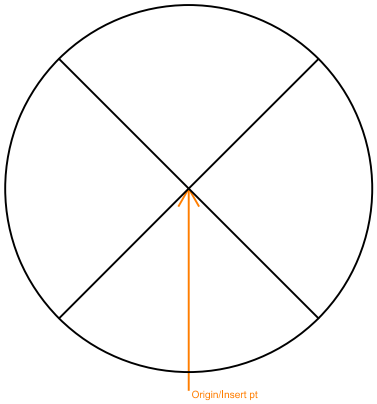
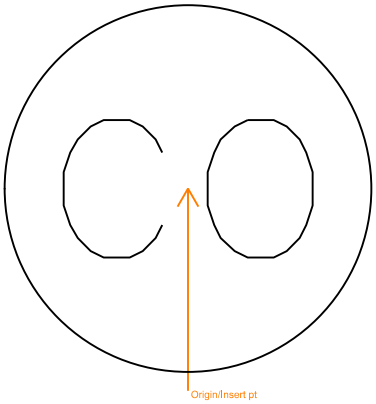
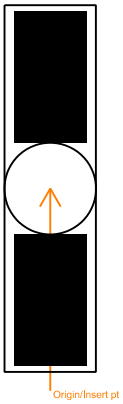
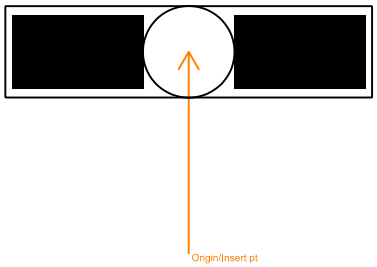
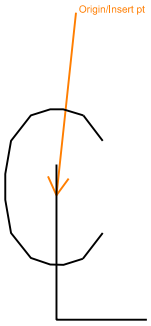
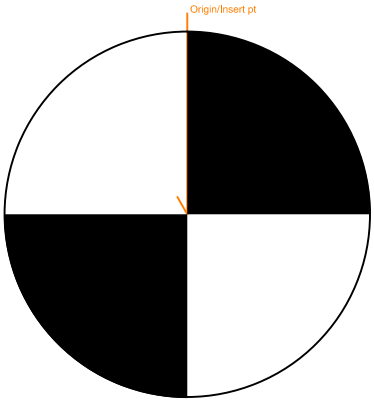
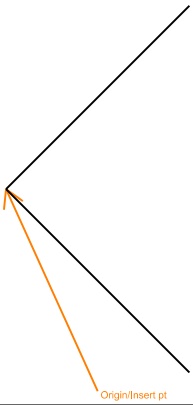
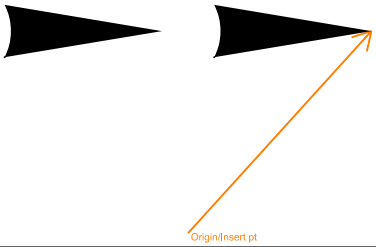
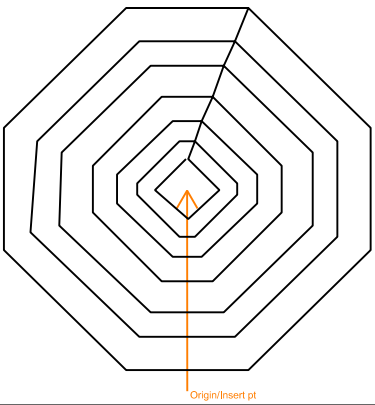
Civil: CATBSN
CATCH BASIN
Element type: Symbol

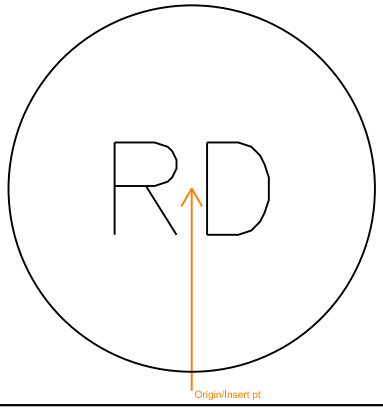


Civil: CATBSR
ROUND CATCH BASIN
Element type: Symbol

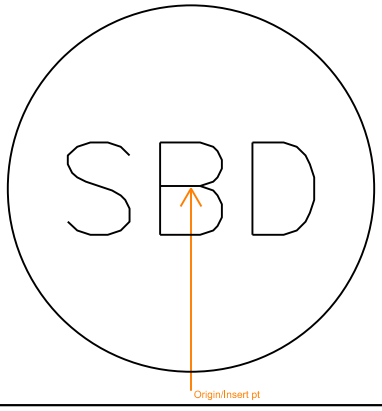


Civil: CDHDR
CORE DRILL HOLE DRILLED
Element type: Symbol

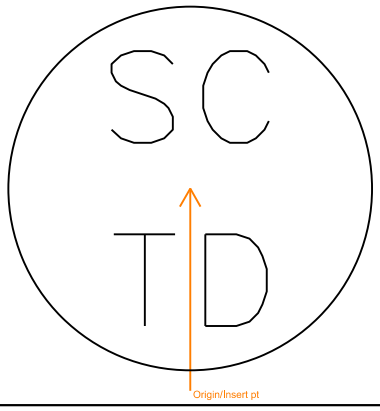
		
Civil: CDHUDR CORE DRILL HOLE UNDRILLED Element type: Symbol	Civil: CLNOUT CLEANOUT Element type: Symbol	Civil: CNR90 CORNER SOLID 90 Element type: Symbol
		
Civil: CNRSF CORNER SOLID FLAT Element type: Symbol	Civil: CNTLIN CENTERLINE SYMBOL Element type: Symbol	Civil: COGRAV CENTER OF GRAVITY SYMBOL Element type: Symbol
		
Civil: CULVEE CULVERT END SYMBOL Element type: Symbol	Civil: DBLARR DOUBLE ARROW TERMINATOR Element type: Symbol	Civil: DRLHOL DRILL HOLE Element type: Symbol



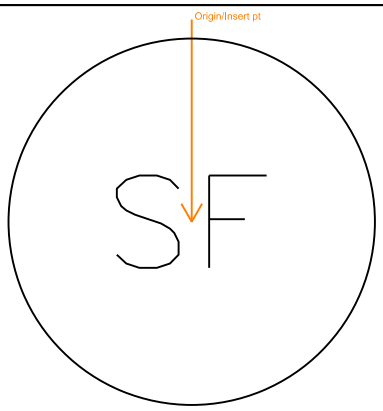
Civil: ECRD
ROCK DAM SEDIMENT TRAP
Element type: Symbol



Civil: ERSBD
STRAW BALE DAM
Element type: Symbol

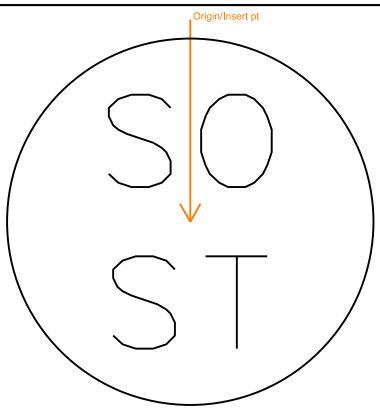


Civil: ERSCTD
SEDIMENT CTRL TMPRY DIVRSION
Element type: Symbol

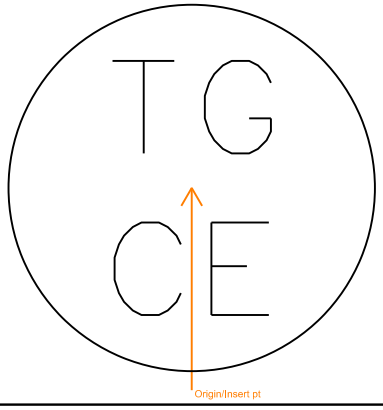


Civil: ERSF
SILT FENCE
Element type: Symbol

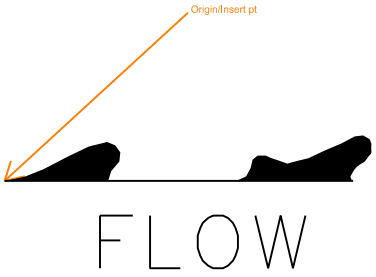
Civil: ERSFRO
SILT FENCE ROCK OVERFLOW
Element type: Symbol



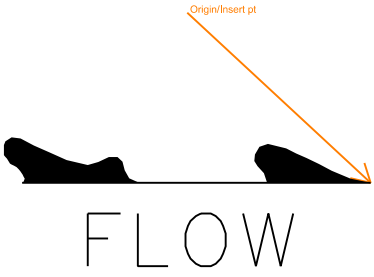
Civil: ERSOST
STONE OUTLET SEDIMENT TRAP
Element type: Symbol



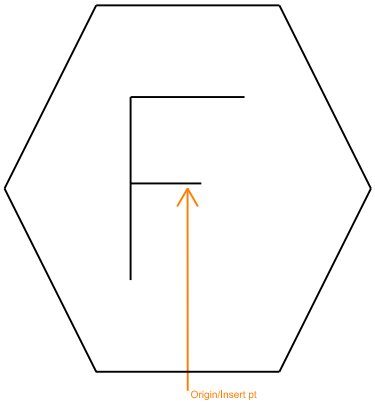
Civil: ERTGCE
CONSTRUCTION ENTRANCE EXIT
Element type: Symbol



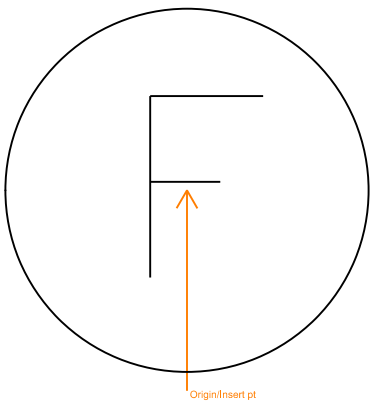
Civil: FLARRL
FLOW ARROW LEFT IN 0 POINT
Element type: Symbol



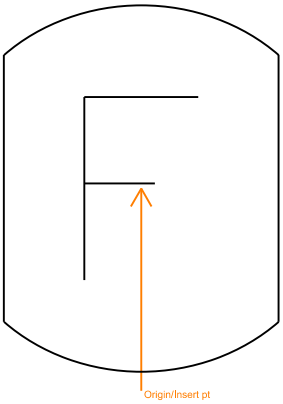
Civil: FLARRR
FLOW ARROW RIGHT IN 0 POINT
Element type: Symbol



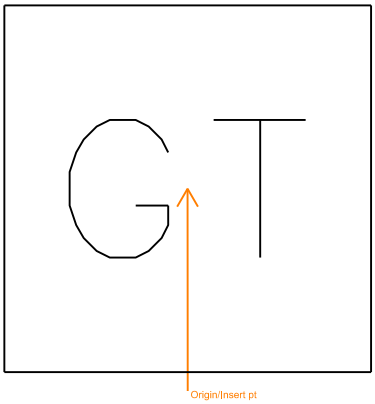
Civil: FOMETR
FUEL OIL METER
Element type: Symbol



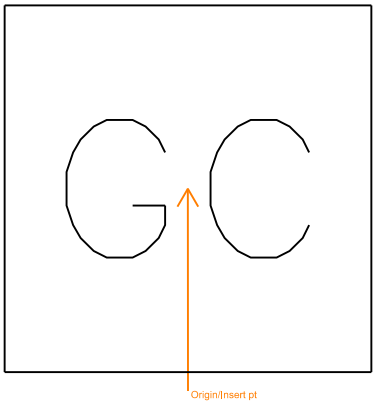
Civil: FOMHOL
FUEL OIL MANHOLE
Element type: Symbol



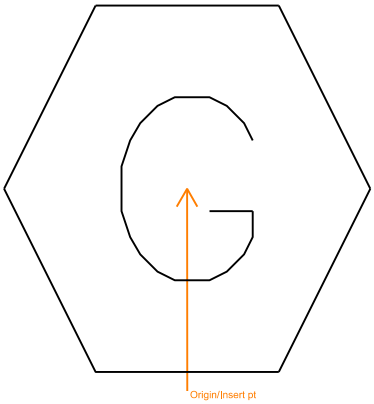
Civil: FOVALT
FUEL OIL VAULT
Element type: Symbol



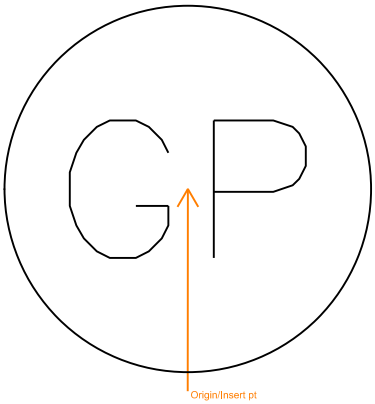
Civil: GREASE
GREASE TRAP
Element type: Symbol



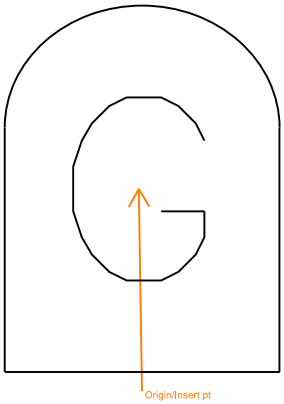
Civil: GRITCH
GRIT CHAMBER
Element type: Symbol



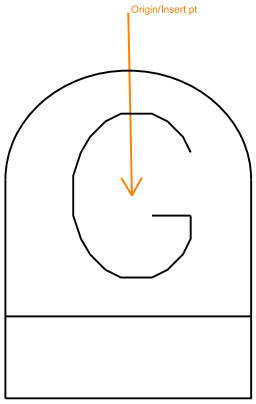
Civil: GSMETR
GAS METER
Element type: Symbol



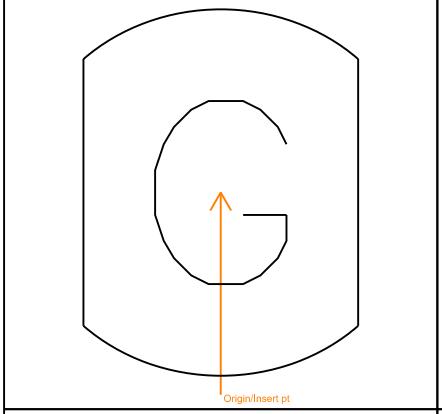
Civil: GSPLNT
GAS PLANT
Element type: Symbol



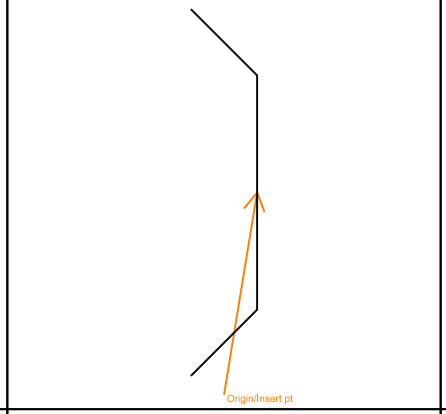
Civil: GSRECR
GAS RECEIVER
Element type: Symbol



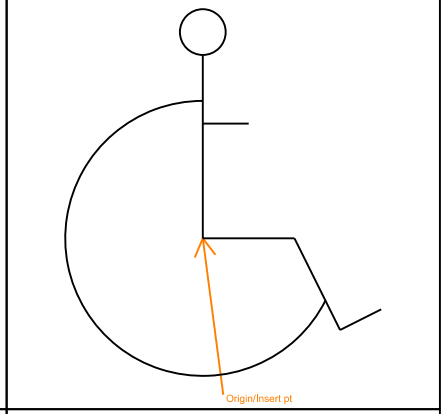
Civil: GSTRAP
GAS TRAP
Element type: Symbol



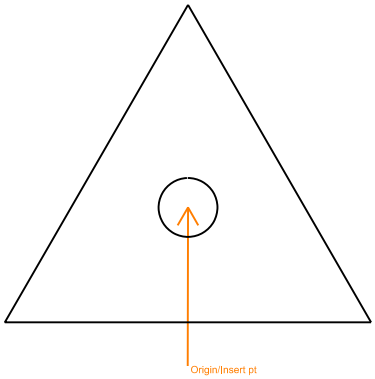
Civil: GSVALT
GAS VALVE VAULT
Element type: Symbol



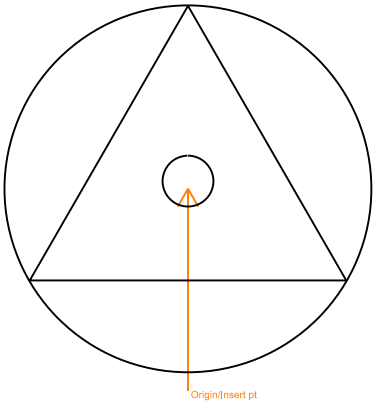
Civil: HEADWL
HEADWALL
Element type: Symbol



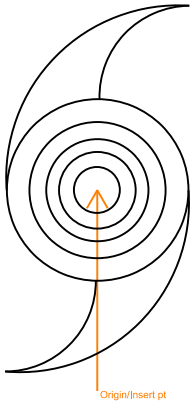
Civil: HNDCAP
HANDICAP CHAIR SYMBOL
Element type: Symbol



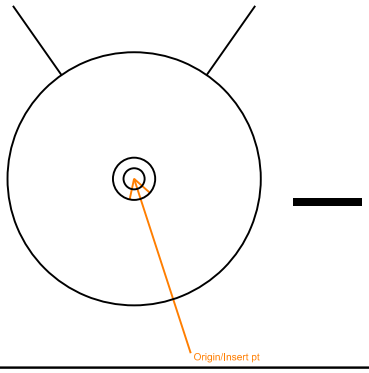
Civil: HORCPT
HORIZONTAL CONTROL PT
Element type: Symbol



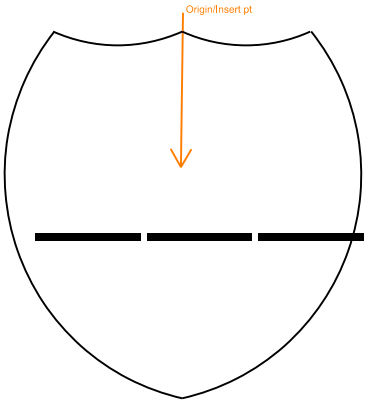
Civil: HOVCPT
HORIZ VERT CONTROL PT
Element type: Symbol



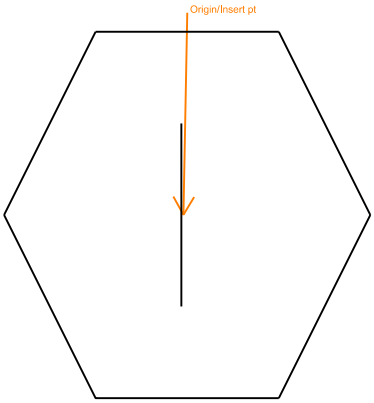
Civil: HUREYE
HURRICANE EYE
Element type: Symbol



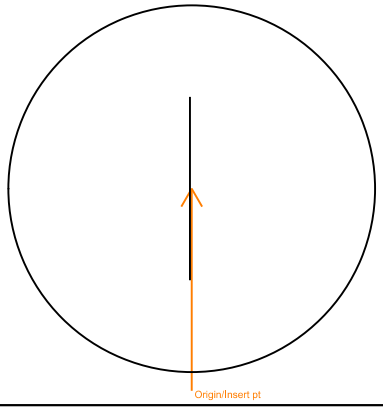
Civil: HYDRNT
HYDRANT
Element type: Symbol



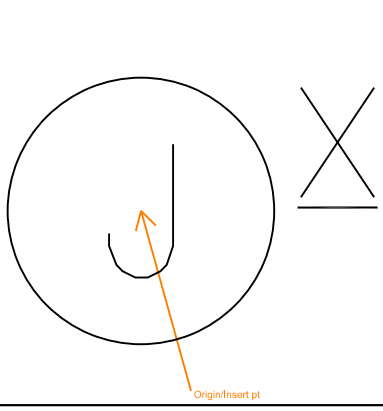
Civil: INSHWY
INTERSTATE HIGHWAY SYMBOL
Element type: Symbol



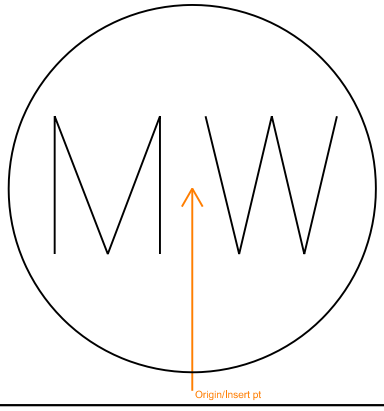
Civil: IWMETR
INDUSTRIAL WASTE WATR METER
Element type: Symbol



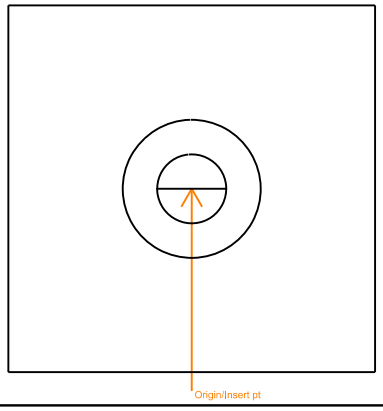
Civil: IWMHOL
INDUSTRIAL WASTE WATR MANHL
Element type: Symbol



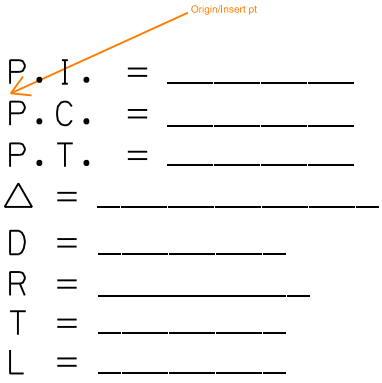
Civil: JNBX
EXTERIOR UTIL JUNCTION BOX
Element type: Symbol



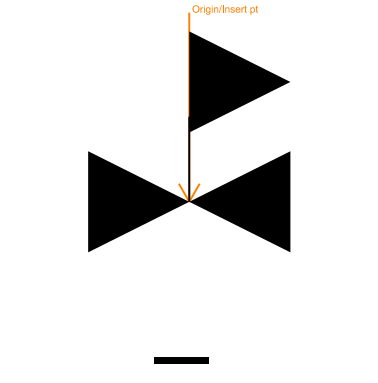
Civil: MONWEL
MONITORING WELL
Element type: Symbol



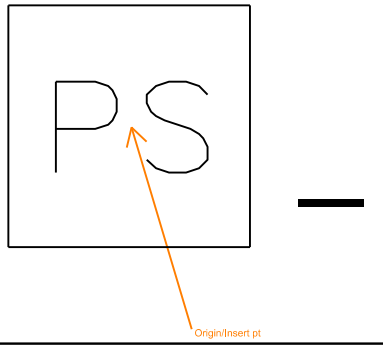
Civil: PHOCPT
PHOTO CONTROL POINT
Element type: Symbol



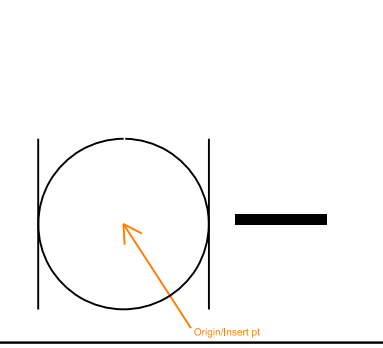
Civil: PIINFO
PI INFORMATION
Element type: Symbol



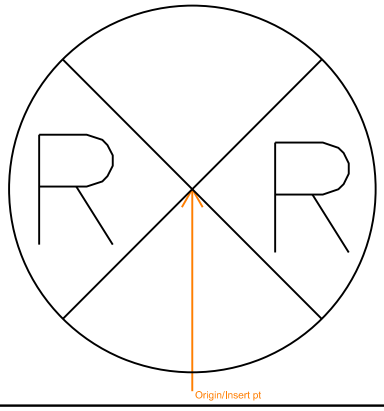
Civil: PIVALV
POST INDICATOR VALVE
Element type: Symbol



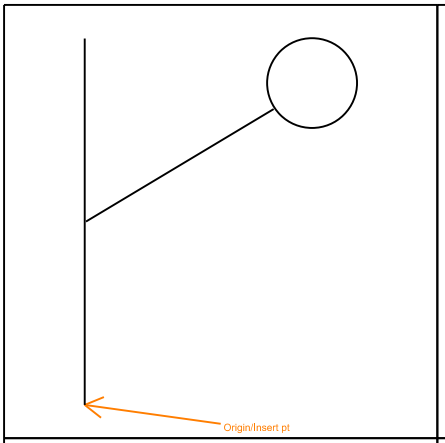
Civil: PMPSTA
PUMP STATION
Element type: Symbol



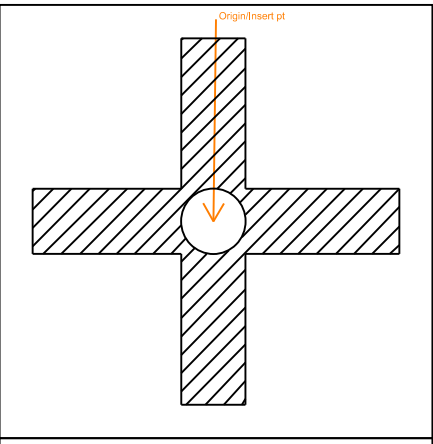
Civil: RGVALV
REGULATOR VALVE
Element type: Symbol



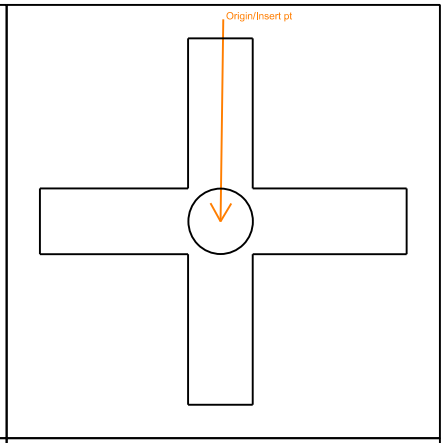
Civil: RRSIGN
RAIL SIGNAL
Element type: Symbol



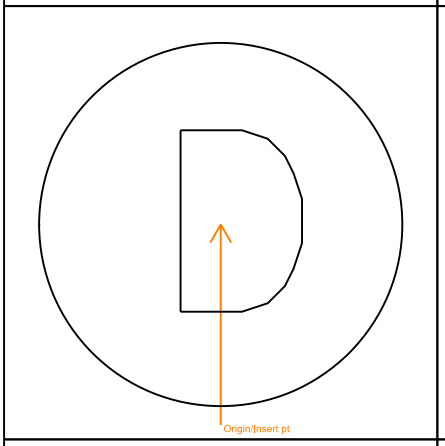
Civil: RRSWTC
RAIL SWITCH
Element type: Symbol



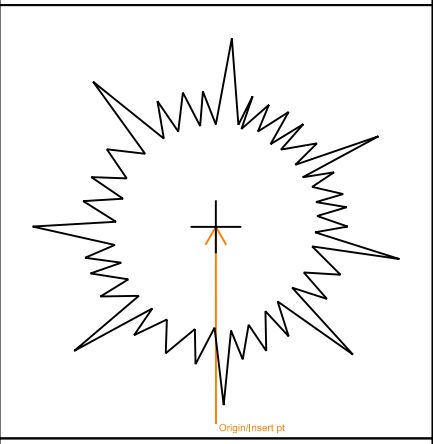
Civil: SCNRH
SECTION CORNER HATCHED
Element type: Symbol



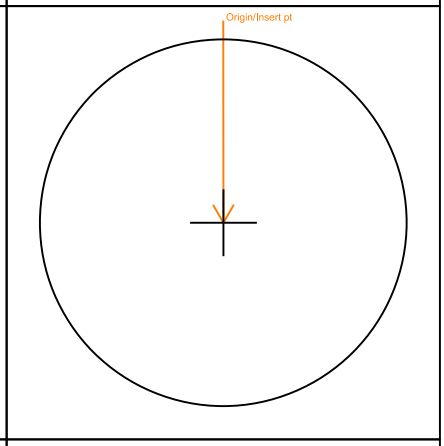
Civil: SCNRO
SECTION CORNER OPEN
Element type: Symbol



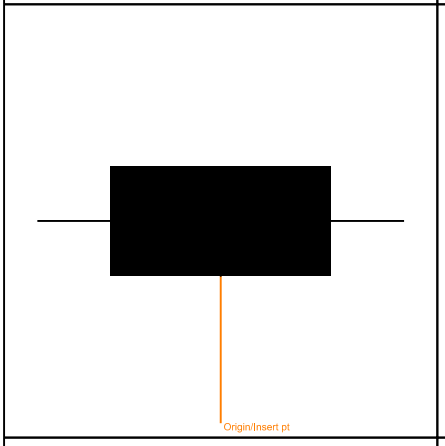
Civil: SDMHOL
STORM DRAINAGE MANHOLE
Element type: Symbol



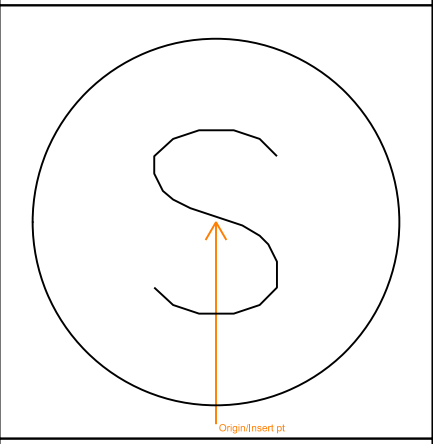
Civil: SHRUBC
CONIFEROUS SHRUB
Element type: Symbol



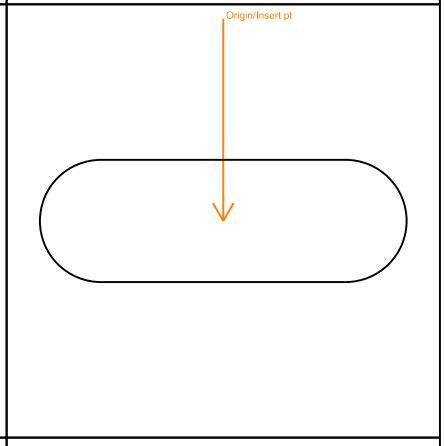
Civil: SHRUBD
DECIDUOUS SHRUB
Element type: Symbol



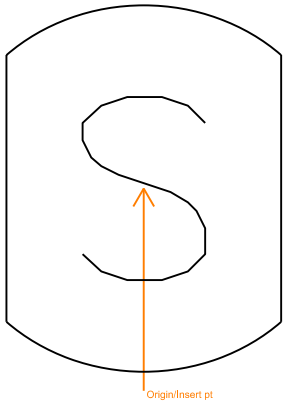
Civil: SIGN
SIGN
Element type: Symbol



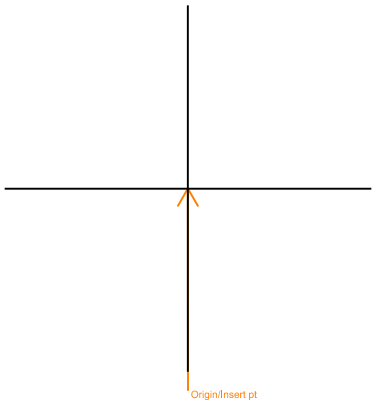
Civil: SNMHOL
SANITARY MANHOLE
Element type: Symbol



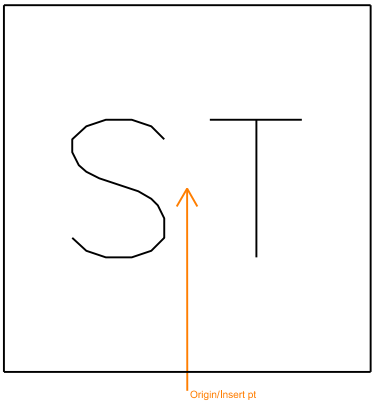
Civil: SNPVSL
SANITARY PRESSURE VESSEL
Element type: Symbol



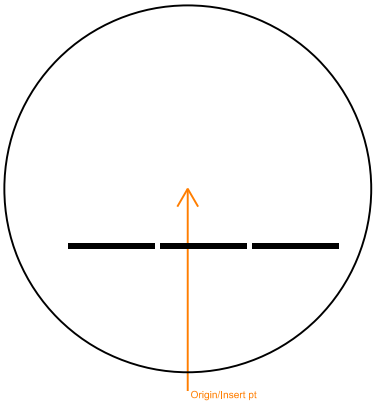
Civil: SNVALT
SANITARY VALVE VAULT
Element type: Symbol



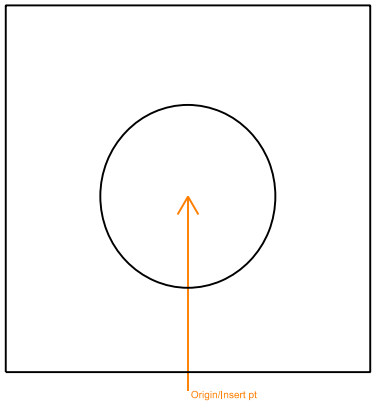
Civil: SPOTEL
GROUND SPOT ELEVATION
Element type: Symbol



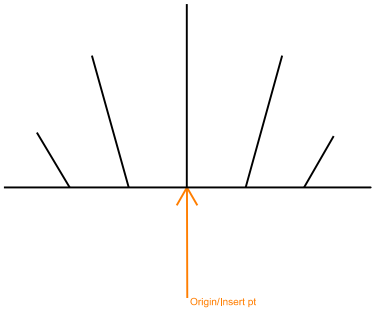
Civil: SPTANK
SEPTIC TANK
Element type: Symbol



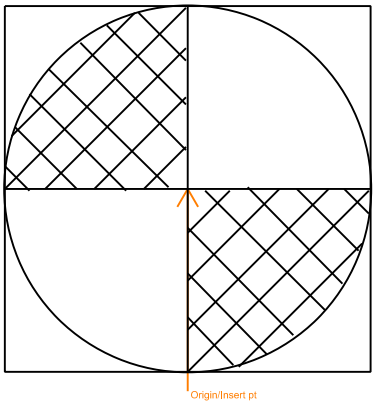
Civil: STHWY
STATE HIGHWAY SYMBOL
Element type: Symbol



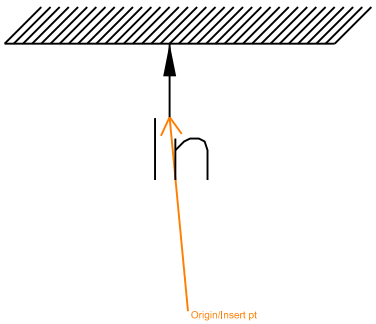
Civil: STMPIT
STEAM PIT
Element type: Symbol



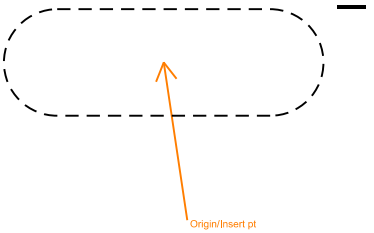
Civil: SWAMP
SWAMP
Element type: Symbol



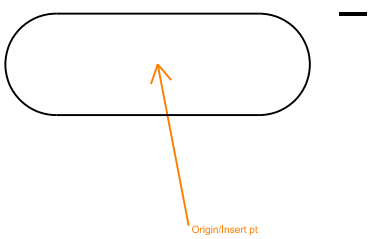
Civil: TIDEG
TIDE GAGE
Element type: Symbol



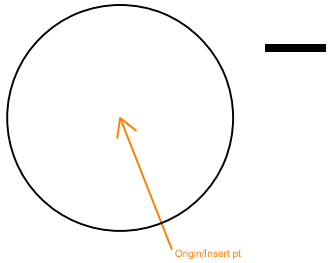
Civil: TIRETR
TIRE TREDDLE
Element type: Symbol



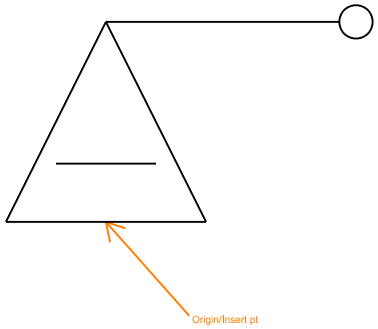
Civil: TNKBG
TANK BELOW GROUND
Element type: Symbol



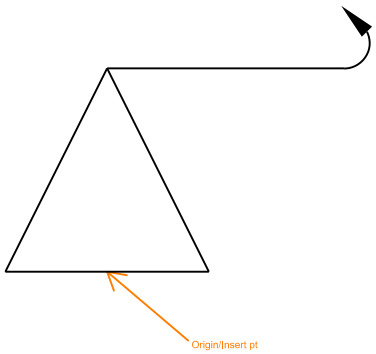
Civil: TNKHAG
TANK HORIZ ABOVE GROUND
Element type: Symbol



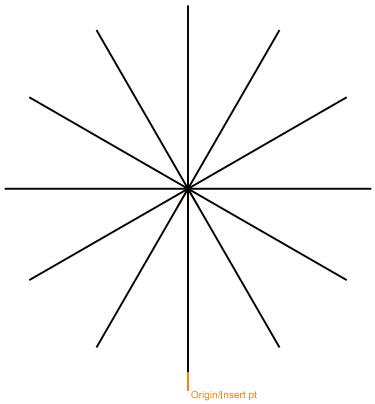
Civil: TNKVAG
TANK VERTICAL ABOVE GROUND
Element type: Symbol



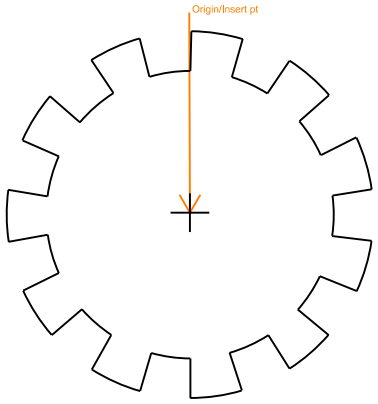
Civil: TRACR
TRAFFIC ARM WTH CARD READER
Element type: Symbol



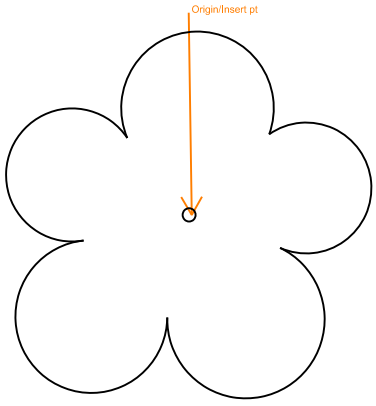
Civil: TRAMS
TRAFFIC ARM MECHANCL SWING
Element type: Symbol



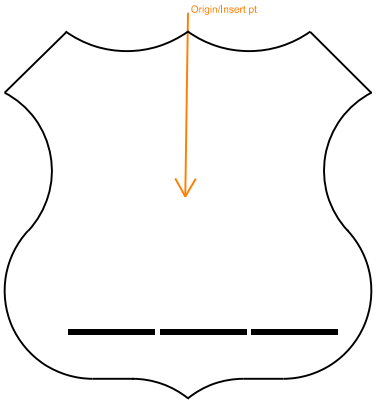
Civil: TREEC
CONIFEROUS TREE
Element type: Symbol



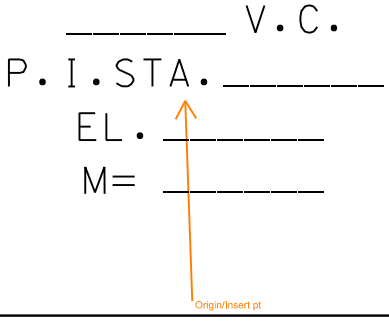
Civil: TREED
DECIDUOUS TREE
Element type: Symbol



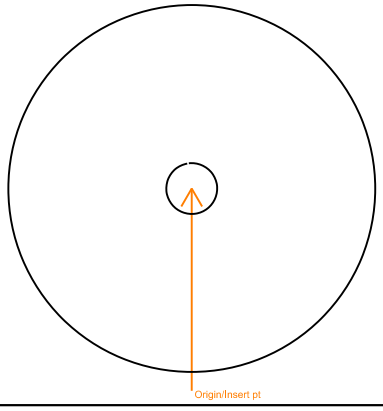
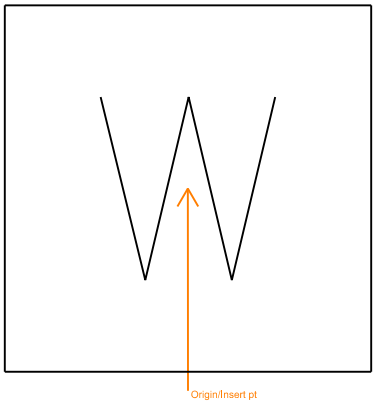
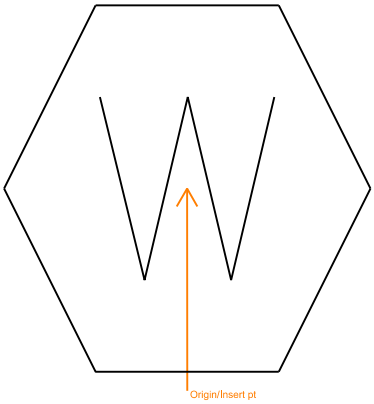
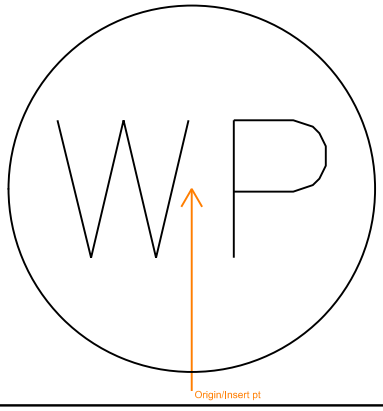
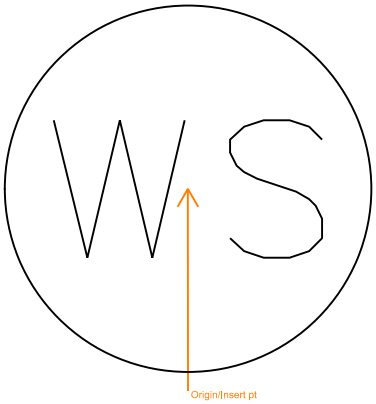
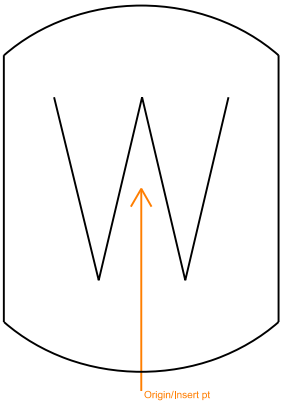
Civil: TREEG
GENERIC TREE
Element type: Symbol



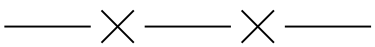
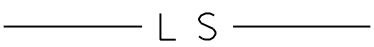
Civil: USHWY
US HIGHWAY SYMBOL
Element type: Symbol



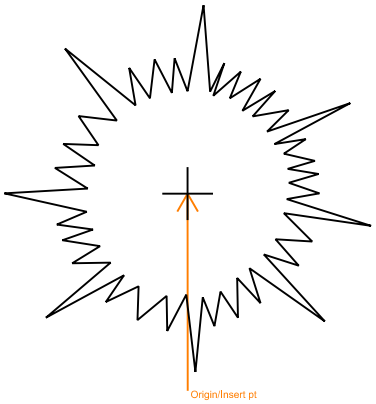
Civil: VCDATA
VERTICAL CURVE DATA
Element type: Symbol

		
Civil: VERCPT VERTICAL CONTROL POINT Element type: Symbol	Civil: WAHHOL WATER HANDHOLE Element type: Symbol	Civil: WAMETR WATER METER Element type: Symbol
		
Civil: WAPLNT WATER PLANT Element type: Symbol	Civil: WASOFT WATER SOFTENER Element type: Symbol	Civil: WAVALT WATER VALVE VAULT Element type: Symbol

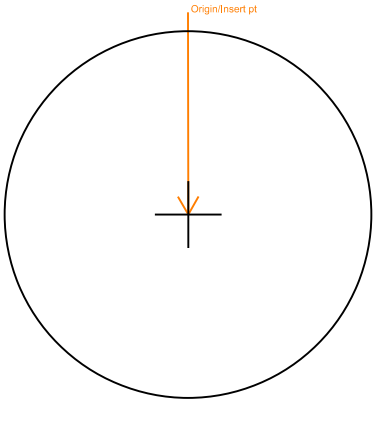
6 Landscape Lines Library

		
Landscape: FENCE FENCE Element type: Line	Landscape: LAWNSP LAWN SPRINKLER SUPPLY Element type: Line	Landscape: TREEL TREE LINE Element type: Line

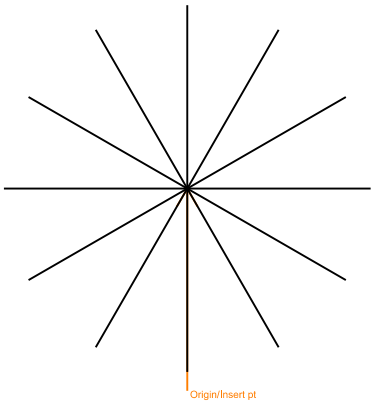
6 Landscape Symbols Library



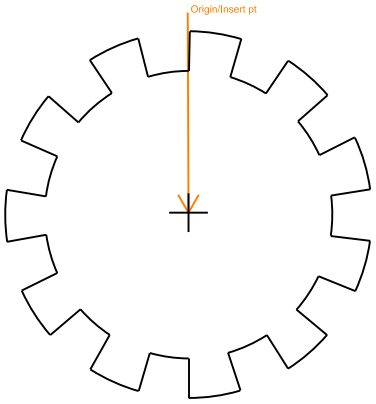
Landscape:SHRUBC
CONIFEROUS SHRUB
Element type: Symbol



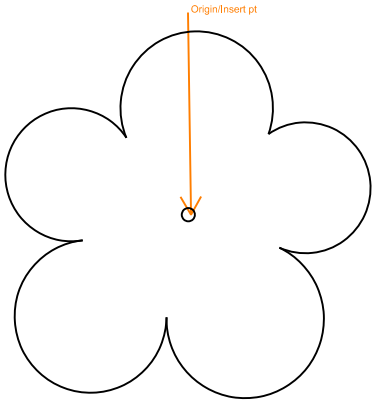
Landscape:SHRUBD
DECIDUOUS SHRUB
Element type: Symbol



Landscape:TREEC
CONIFEROUS TREE
Element type: Symbol

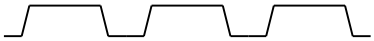


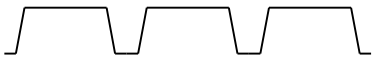
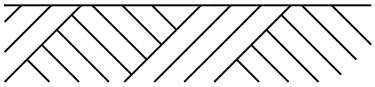
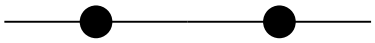
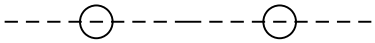
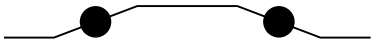
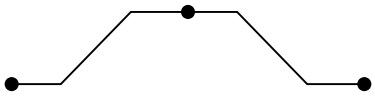
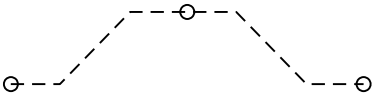
Landscape:TREED
DECIDUOUS TREE
Element type: Symbol

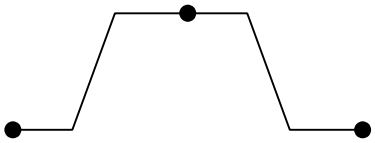
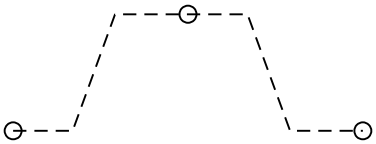
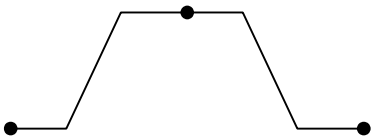
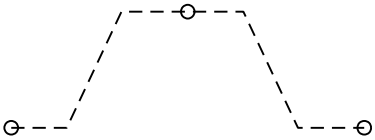
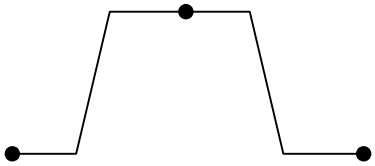
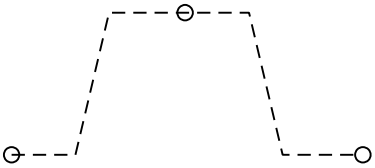
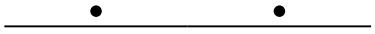


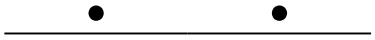
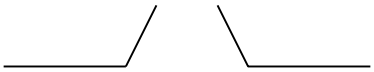
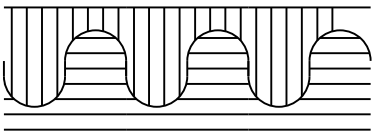
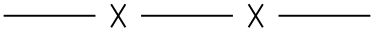
Landscape:TREEG
GENERIC TREE
Element type: Symbol

7 Structural Lines Library

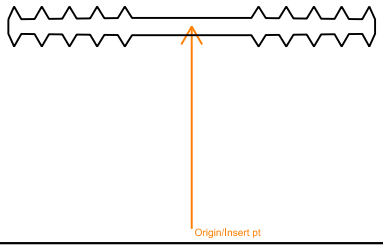
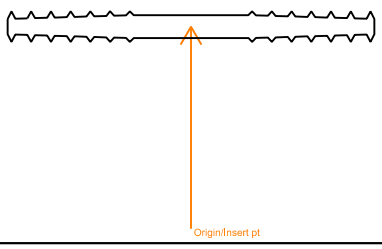
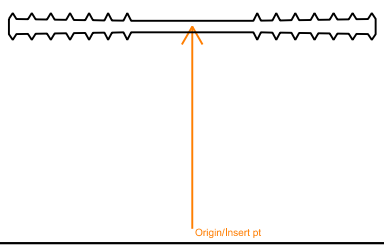
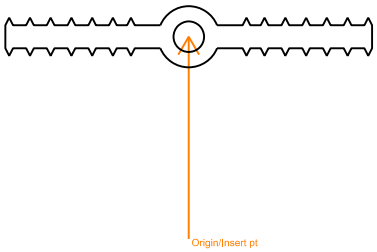
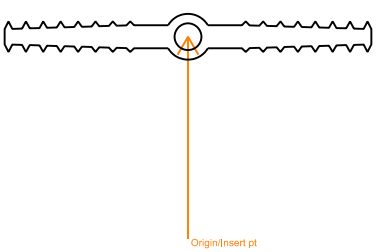
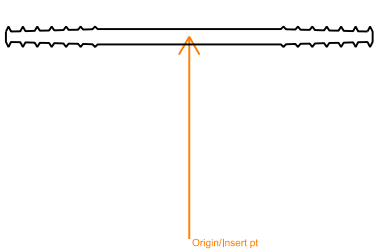
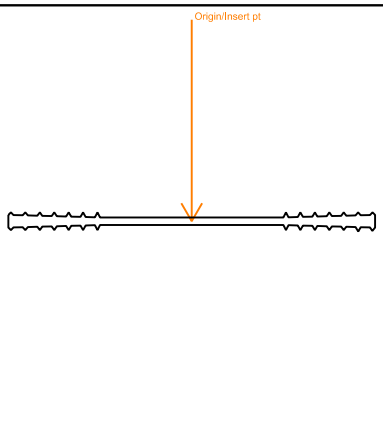
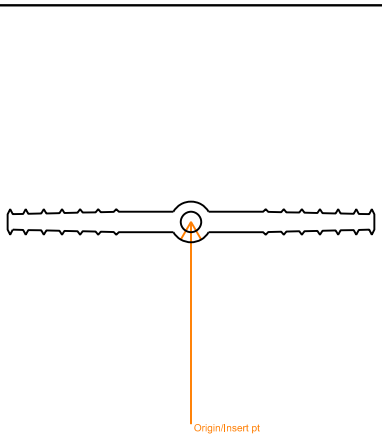
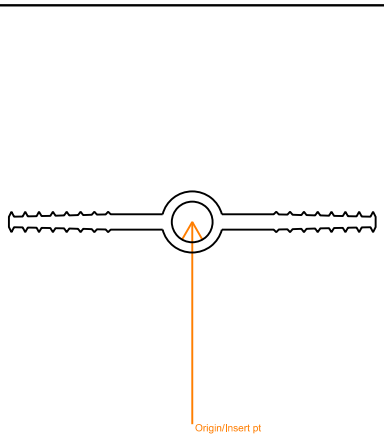
Structural: BERM BERM Element type: Line	Structural: CMP127 CMP 127MMX25MM OR 5IN X 1IN Element type: Line	Structural: CMP152 CMP 152MMX51MM OR 6IN X 2IN Element type: Line
Structural: CMP38 CMP38MMX6MM OR 1.5INX.25IN Element type: Line	Structural: CMP51 CMP51MMX13MM OR 2IN X .5IN Element type: Line	Structural: CMP68 CMP68MMX13MM OR 2.7INX.5IN Element type: Line
		
Structural: CMP76 CMP76MMX25MM OR 3IN X 1IN Element type: Line	Structural: DECKCR CORRUGATED METAL DECK Element type: Line	Structural: DECKFL METAL DECK FLOOR Element type: Line

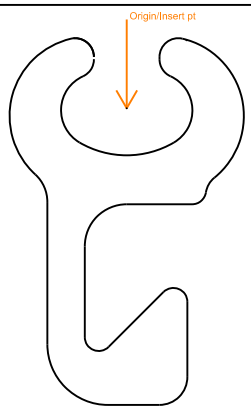
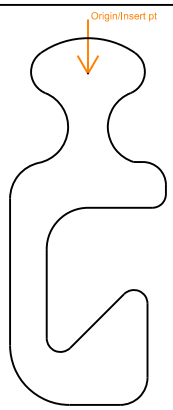
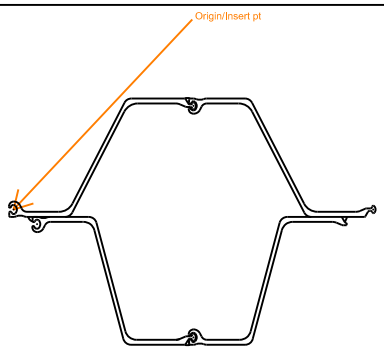
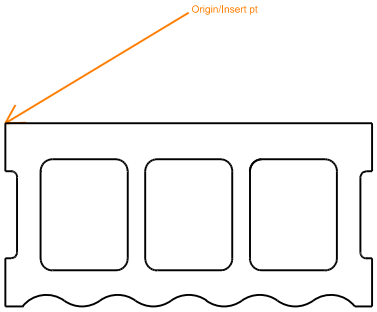
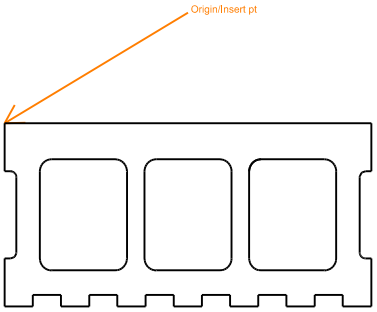
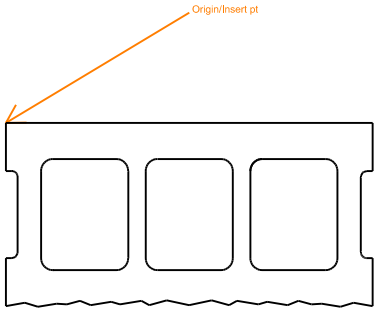
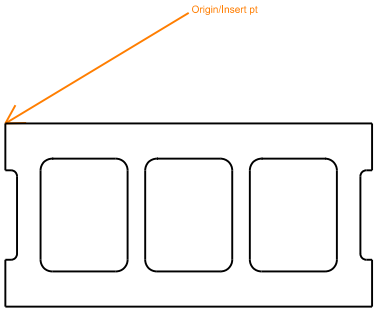
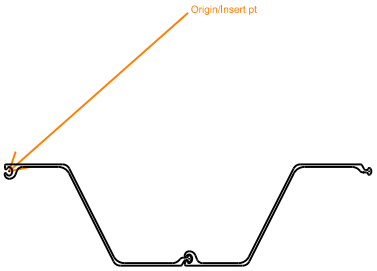
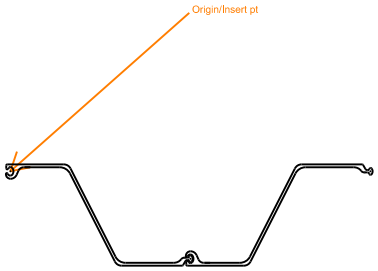
		
Structural: DECKRF METAL DECK ROOF Element type: Line	Structural: GROUND GROUND Element type: Line	Structural: INTRLK INTERLOCK SLOPE PROTECTION Element type: Line
		
Structural: PS31 PS31 SHEET PILE Element type: Line	Structural: PS31H PS31 SHEET PILE HIDDEN Element type: Line	Structural: PSA23 PSA23 SHEET PILE Element type: Line
		
Structural: PSA23H PSA23 SHEET PILE HIDDEN Element type: Line	Structural: PZ22 PZ22 SHEET PILE Element type: Line	Structural: PZ22H PZ22 SHEET PILE HIDDEN Element type: Line

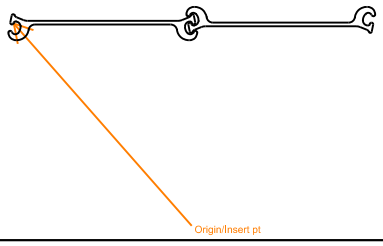
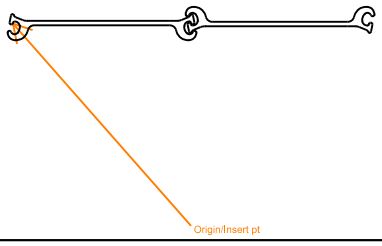
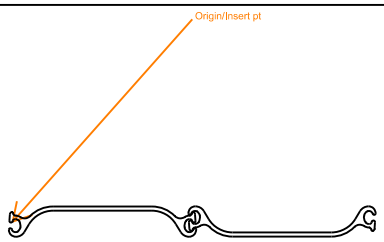
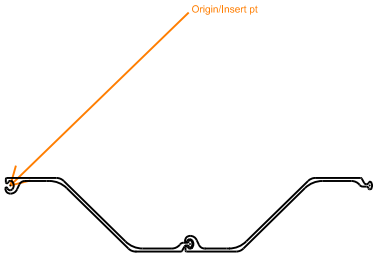
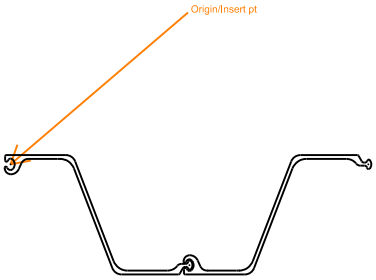
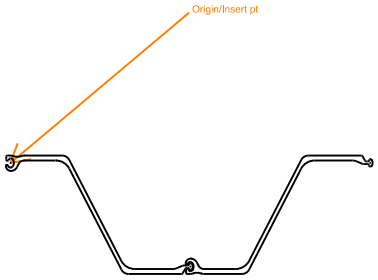
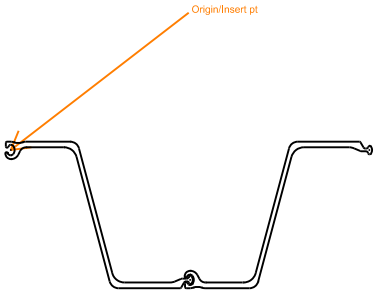
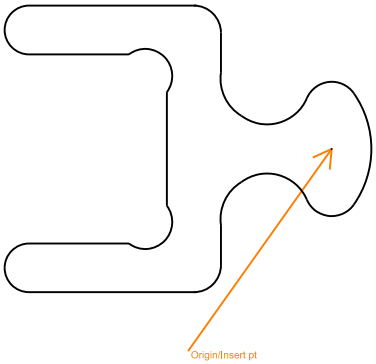
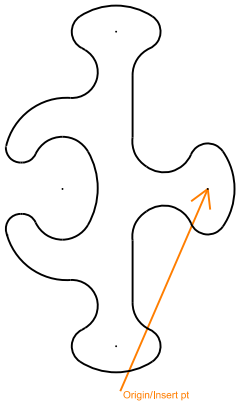
		
Structural: PZ27 PZ27 SHEET PILE Element type: Line	Structural: PZ27H PZ27 SHEET PILE HIDDEN Element type: Line	Structural: PZ35 PZ35 SHEET PILE Element type: Line
		
Structural: PZ35H PZ35 SHEET PILE HIDDEN Element type: Line	Structural: PZ40 PZ40 SHEET PILE Element type: Line	Structural: PZ40H PZ40 SHEET PILE HIDDEN Element type: Line
		
Structural: REBR12 REBAR AT 12IN Element type: Line	Structural: REBR18 REBAR AT 18IN Element type: Line	Structural: REBR6 REBAR AT 6IN Element type: Line

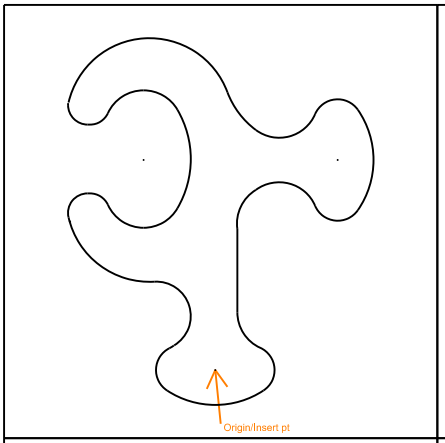
		
Structural: REBR9 REBAR AT 9IN Element type: Line	Structural: RIPPLN RIPRAP PLAN VIEW Element type: Line	Structural: ROCK ROCK Element type: Line
		
Structural: SHORLN SHORE LINE Element type: Line	Structural: WWFBRC WELDED WIRE FABRIC Element type: Line	

7 Structural Objects Library

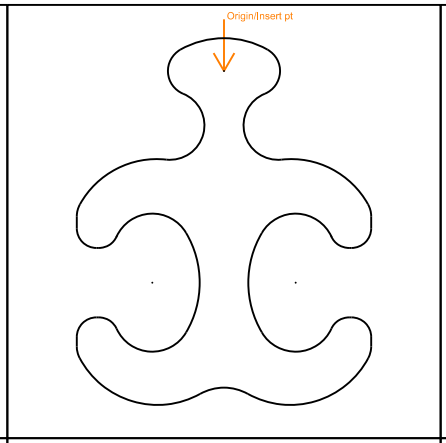
		
Structural: 4FRB 4 IN FLAT RIBBED Element type: Object	Structural: 6FRBHD 6 IN FLAT RIBBED HVY DTY Element type: Object	Structural: 6FRBLW 6 IN FLAT RIBBED LT WT Element type: Object
		
Structural: 6RCBHD 6 IN RIB W CTR BULB HVY DTY Element type: Object	Structural: 6RCBLW 6 IN RIB W CTR BULB LT WT Element type: Object	Structural: 9FLBHD 9 IN FLAT RIBBED HVY DTY Element type: Object
		
Structural: 9FRBLW 9 IN FLAT RIBBED LT WT Element type: Object	Structural: 9RCBHD 9 IN RIB W CTR BULB HVY DTY Element type: Object	Structural: 9RCBLW 9 IN RIB W CTR BULB LT WT Element type: Object

		
Structural: AZLBF FOSTER CONN AZ LBF Element type: Object	Structural: AZLBM FOSTER CONN AZ LBM Element type: Object	Structural: BOX BOX PILE Element type: Object
		
Structural: CMUFL FLUTED CONC BLK 8X8X16 Element type: Object	Structural: CMURIB RIBBED CONC BLK 8X8X16 Element type: Object	Structural: CMUSF SPLIT FACE CONC BLK 8X8X16 Element type: Object
		
Structural: CMUSTR CONC BLOCK 8X8X16 STR. Element type: Object	Structural: PLZ23 PLZ23 SHEET PILING Element type: Object	Structural: PLZ25 PLZ25 SHEET PILING Element type: Object

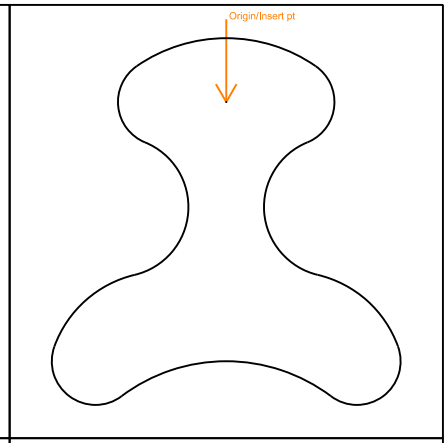
		
Structural: PS27.5 PS27.5 SHEET PILE Element type: Object	Structural: PS31 PS31 SHEET PILE Element type: Object	Structural: PSA23 PSA23 SHEET PILE Element type: Object
		
Structural: PZ22 PZ22 SHEET PILE Element type: Object	Structural: PZ27 PZ27 SHEET PILE Element type: Object	Structural: PZ35 PZ35 SHEET PILE Element type: Object
		
Structural: PZ40 PZ40 SHEET PILE Element type: Object	Structural: PZBBSM FOSTER CONN HPILE Element type: Object	Structural: PZBULL FOSTER CONN BULLHEAD Element type: Object



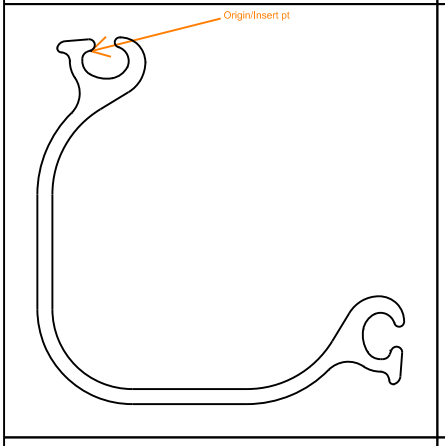
Structural: PZCBM
FOSTER CONN CBM
Element type: Object



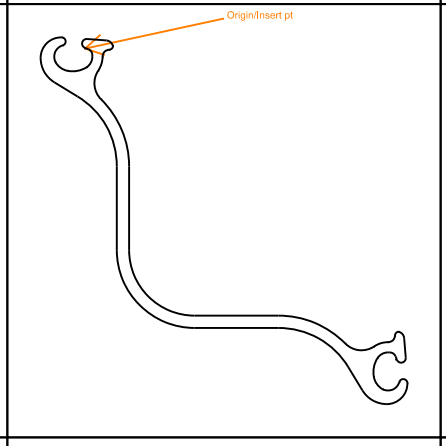
Structural: PZJOKR
FOSTER CONN JOKER
Element type: Object



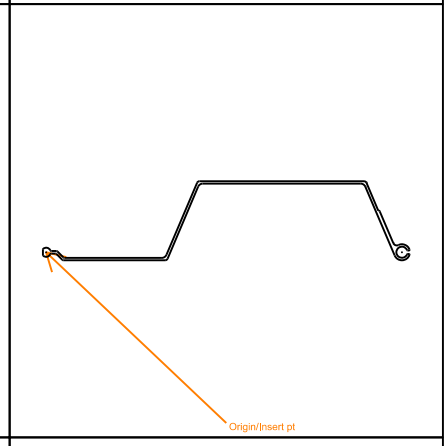
Structural: PZWOM
FOSTER CONN PZ WOM
Element type: Object



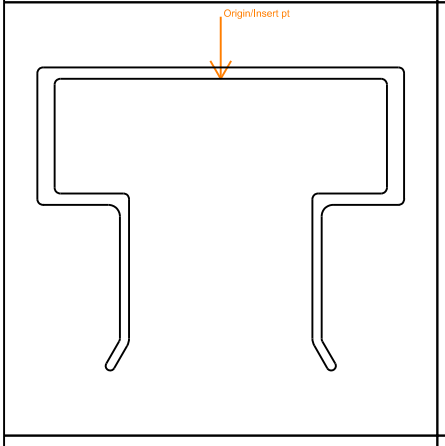
Structural: RC230
RC230 SHEET PILE CONNECTION
Element type: Object



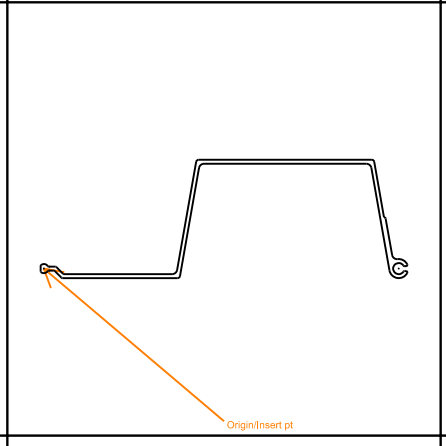
Structural: RC231
RC231 SHEET PILE CONNECTION
Element type: Object



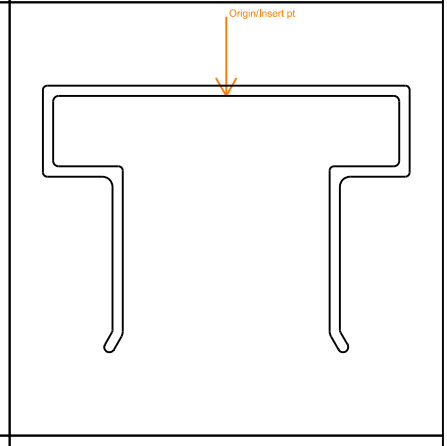
Structural: SS803
FOSTER SUPERLOC 1540
Element type: Object



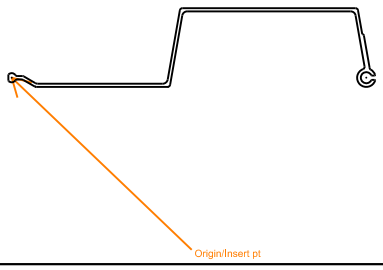
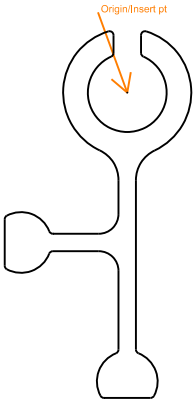
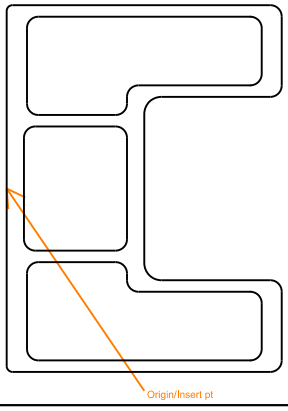
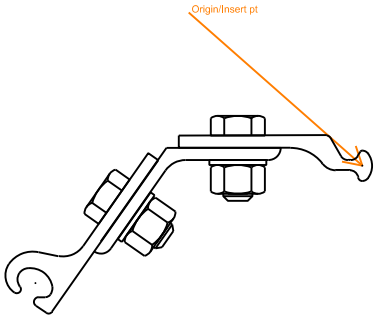
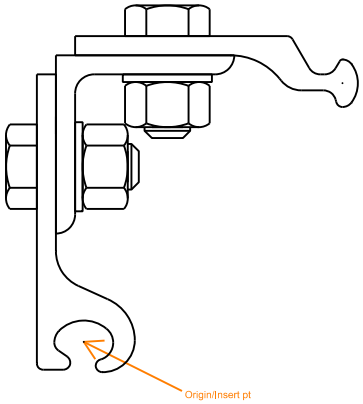
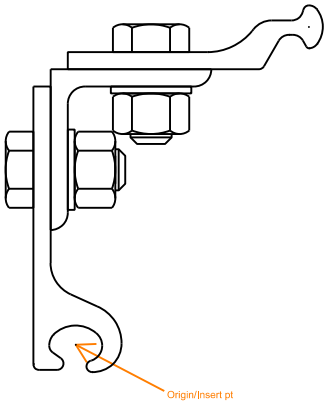
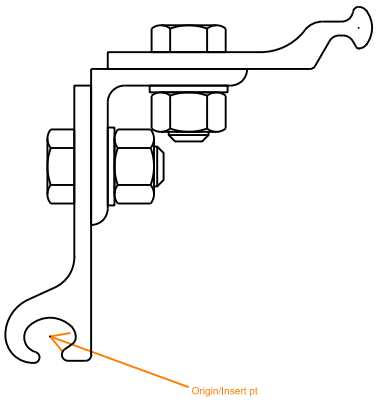
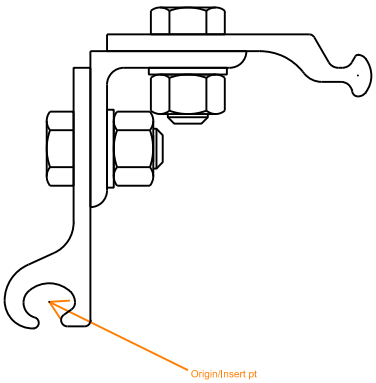
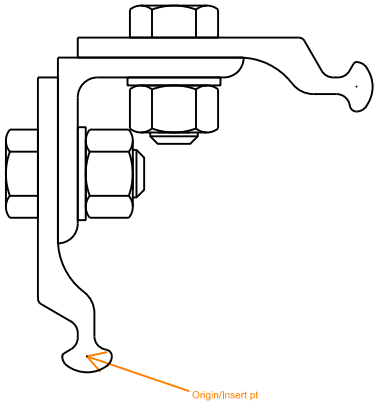
Structural: SS805
FOSTER CAP 1550 1540
Element type: Object

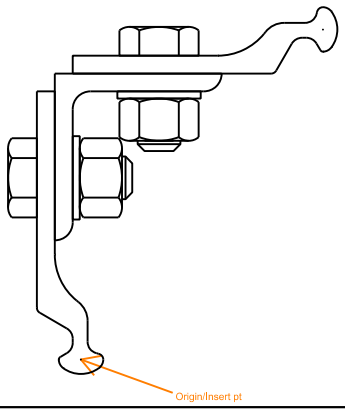


Structural: SS806
FOSTER SUPERLOC 1560
Element type: Object

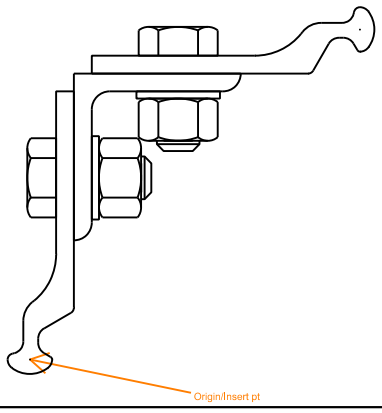


Structural: SS807
FOSTER 1560 CAP
Element type: Object

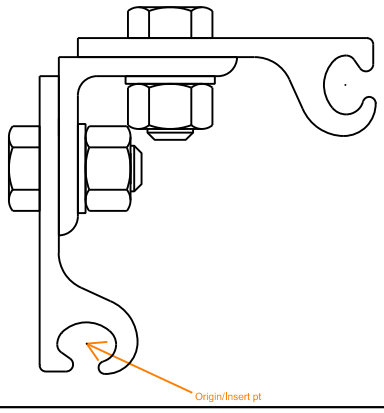
		
Structural: SS808 FOSTER SUPERLOC 1550 Element type: Object	Structural: SS809 FOSTER 180 90 CONNECTOR Element type: Object	Structural: SS810 FOSTER SUPERWALE Element type: Object
		
Structural: ZB_27 FOSTER ANGLE FAB CORNER Element type: Object	Structural: ZC270 PZ22 PZ27 L CONNECTION Element type: Object	Structural: ZC271 PZ22 PZ27 L CONNECTION Element type: Object
		
Structural: ZC272 PZ22 PZ27 L CONNECTION Element type: Object	Structural: ZC273 PZ22 PZ27 L CONNECTION Element type: Object	Structural: ZC274 PZ22 PZ27 L CONNECTION Element type: Object



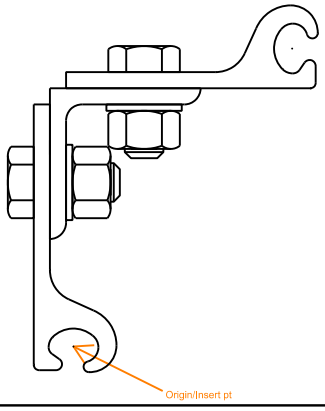
Structural: ZC275
PZ22 PZ27 L CONNECTION
Element type: Object



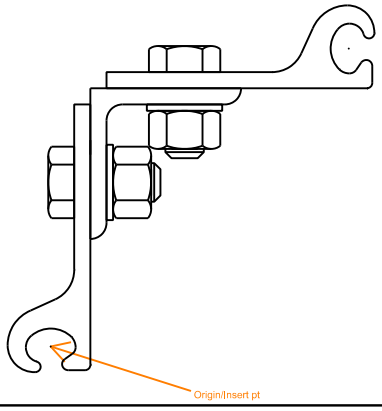
Structural: ZC276
PZ22 PZ27 L CONNECTION
Element type: Object



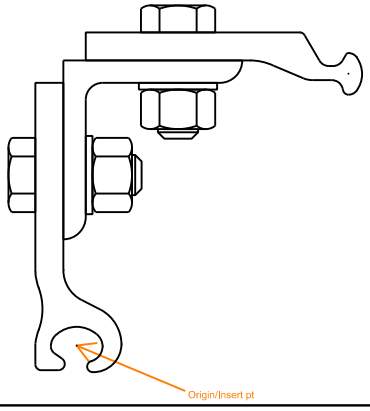
Structural: ZC277
PZ22 PZ27 L CONNECTION
Element type: Object



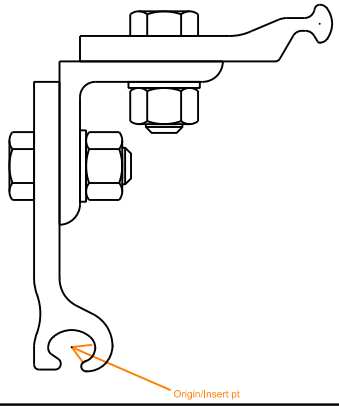
Structural: ZC278
PZ22 PZ27 L CONNECTION
Element type: Object



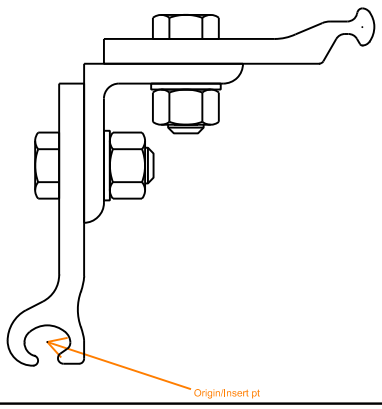
Structural: ZC279
PZ22 PZ27 L CONNECTION
Element type: Object



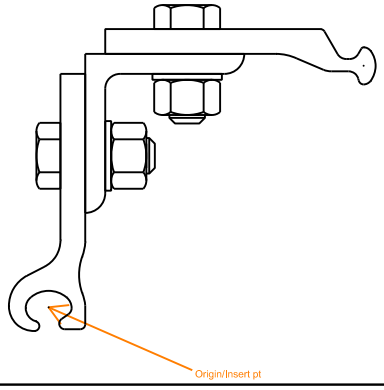
Structural: ZC350
PZ35 PZ40 L CONNECTION
Element type: Object



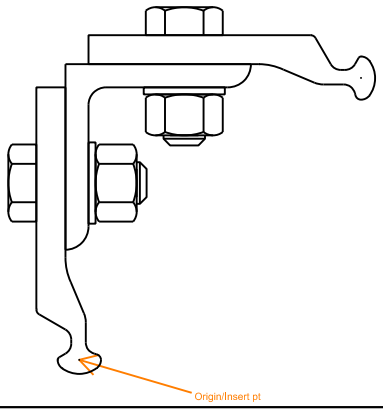
Structural: ZC351
PZ35 PZ40 L CONNECTION
Element type: Object



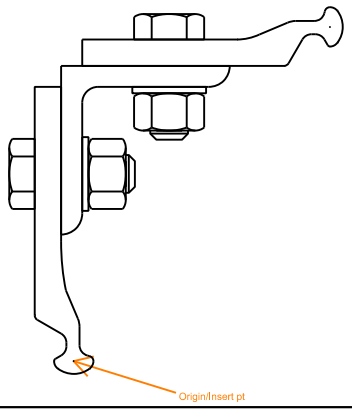
Structural: ZC352
PZ35 PZ40 L CONNECTION
Element type: Object



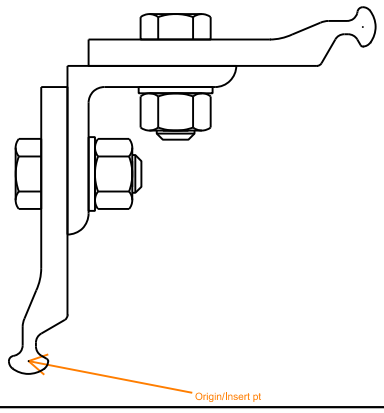
Structural: ZC353
PZ35 PZ40 L CONNECTION
Element type: Object



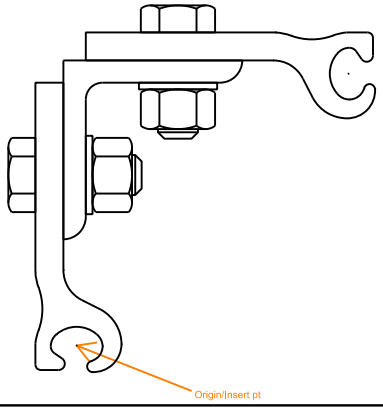
Structural: ZC354
PZ35 PZ40 L CONNECTION
Element type: Object



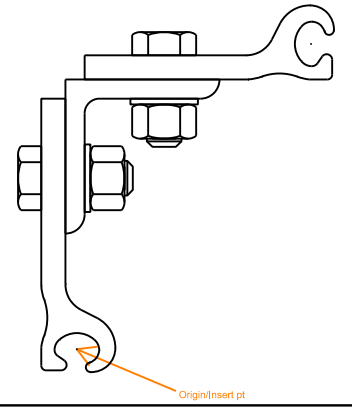
Structural: ZC355
PZ35 PZ40 L CONNECTION
Element type: Object



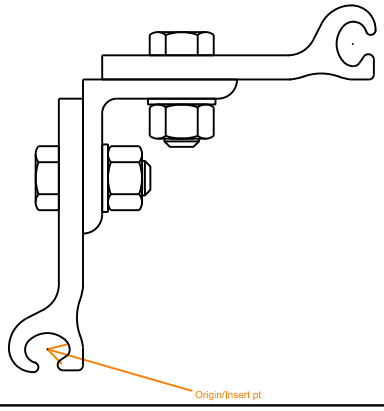
Structural: ZC356
PZ35 PZ40 L CONNECTION
Element type: Object



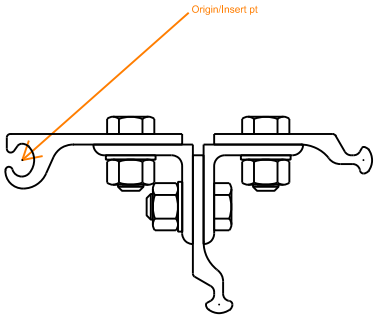
Structural: ZC357
PZ35 PZ40 L CONNECTION
Element type: Object



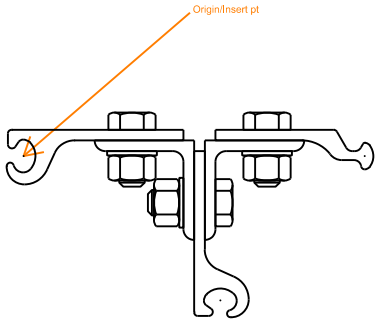
Structural: ZC358
PZ35 PZ40 L CONNECTION
Element type: Object



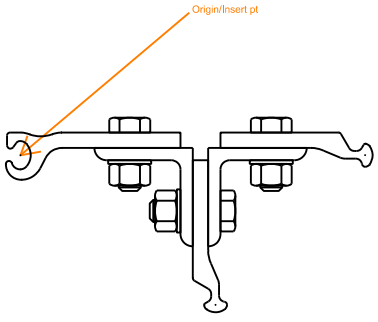
Structural: ZC359
PZ35 PZ40 L CONNECTION
Element type: Object



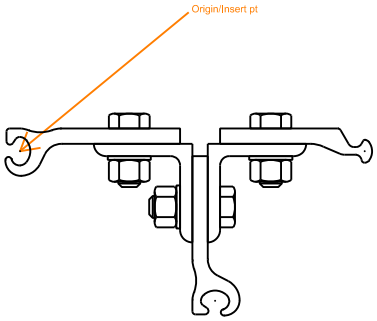
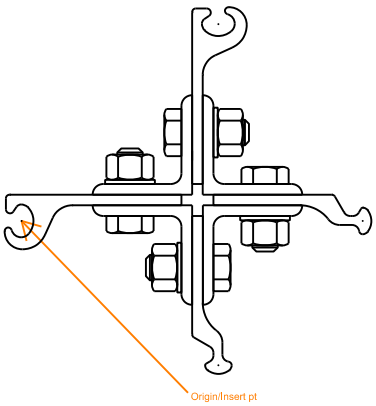
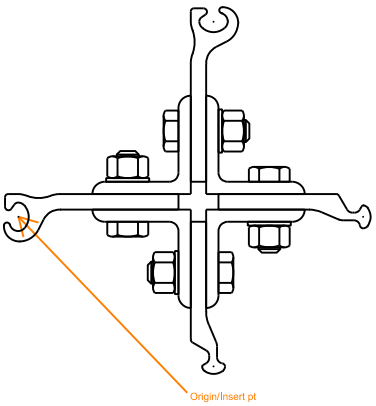
Structural: ZT270
PZ22 PZ27 T CONNECTION
Element type: Object



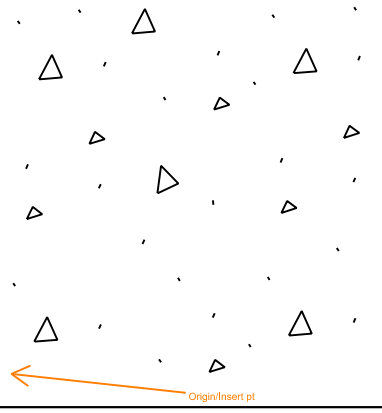
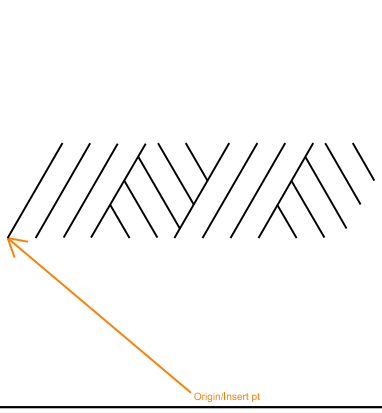
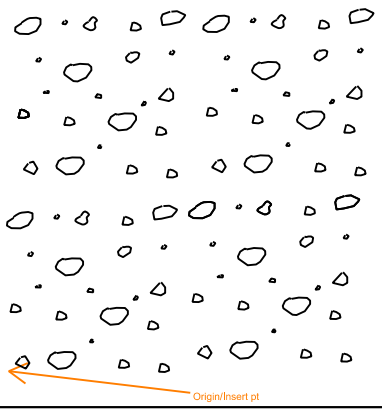
Structural: ZT271
PZ22 PZ27 T CONNECTION
Element type: Object



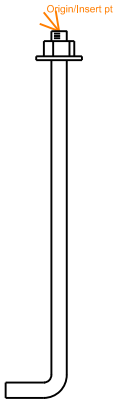
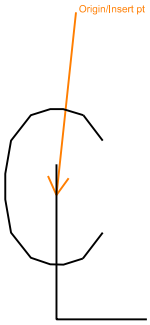
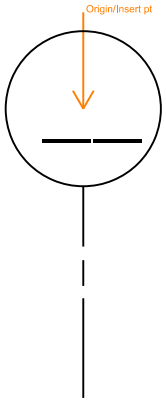
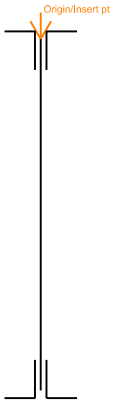
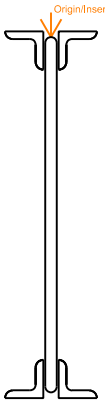
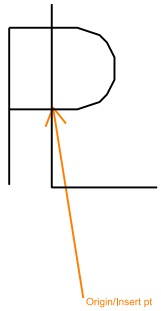
Structural: ZT350
PZ35 PZ40 T CONNECTION
Element type: Object

		
Structural: ZT351 PZ35 PZ40 T CONNECTION Element type: Object	Structural: ZX270 PZ22 PZ27 CROSS CONNECTION Element type: Object	Structural: ZX350 PZ35 PZ40 CROSS CONNECTION Element type: Object

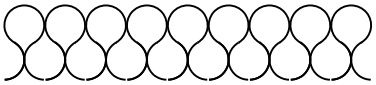
7 Structural Patterns Library

		
Structural: CONCST CONCRETE STONE Element type: Pattern	Structural: EEARTH EXISTING EARTH Element type: Pattern	Structural: GRAVEL GRAVEL Element type: Pattern

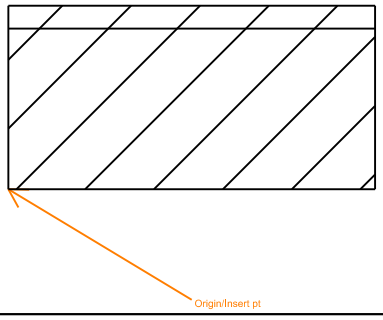
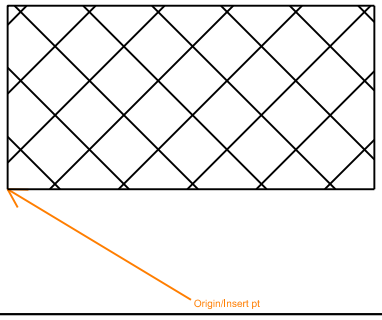
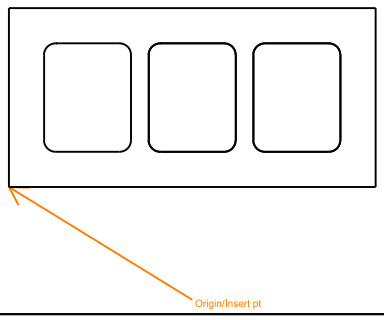
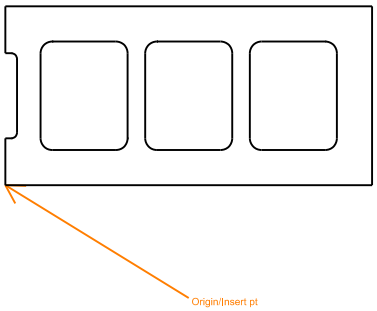
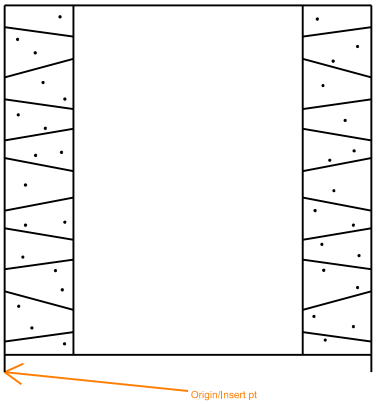
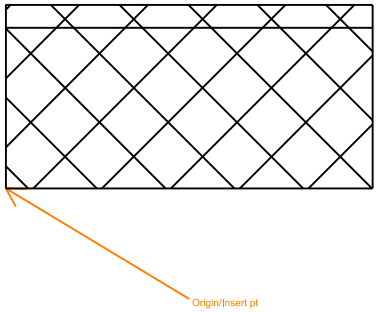
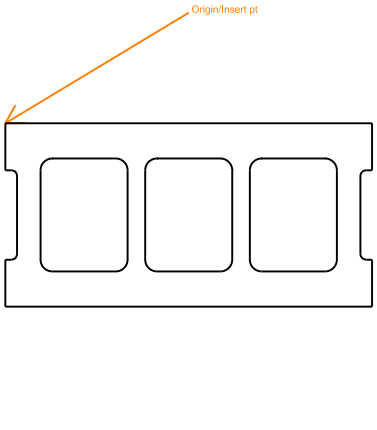
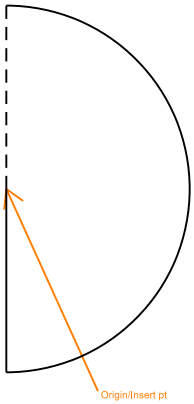
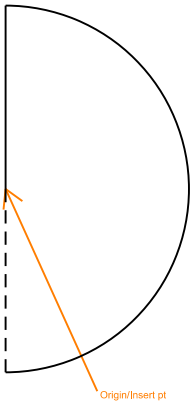
7 Structural Symbols Library

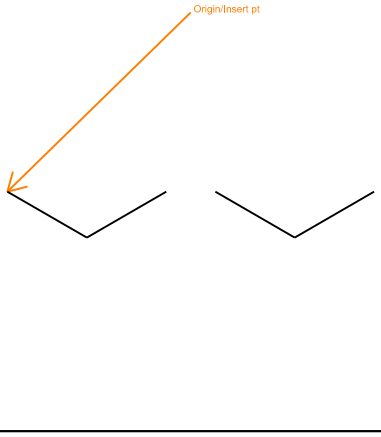
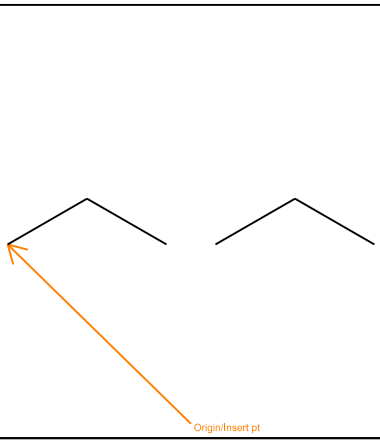
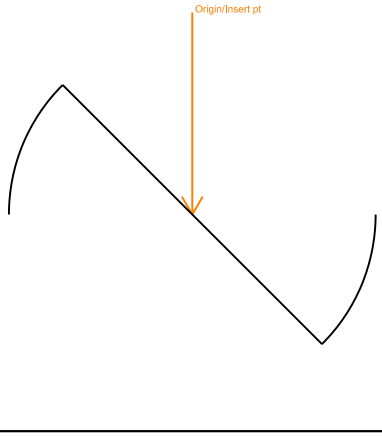
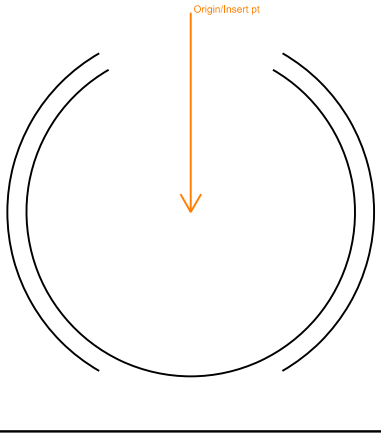
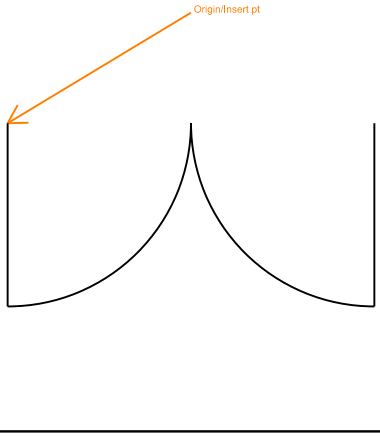
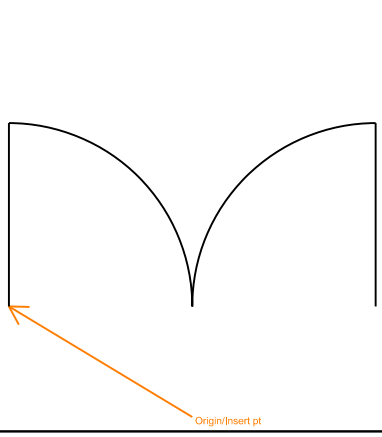
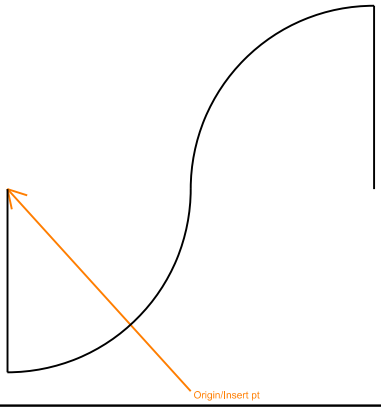
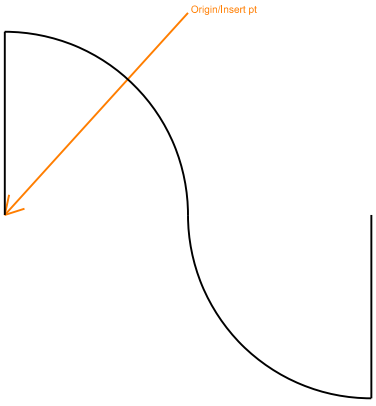
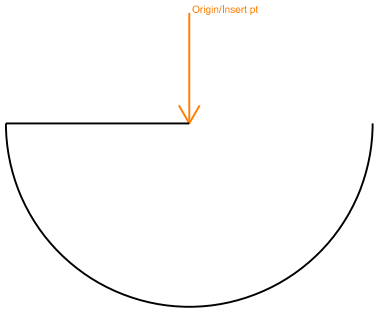
		
Structural: ANBOLT ANCHOR BOLT Element type: Symbol	Structural: CNTLIN CENTERLINE SYMBOL Element type: Symbol	Structural: COLLIN COLUMN LINE GRID INDICATOR Element type: Symbol
		
Structural: JSTBR1 JOIST BAR SINGLE LINE Element type: Symbol	Structural: JSTBR2 JOIST BAR DOUBLE LINE Element type: Symbol	Structural: PLATE PLATE SYMBOL Element type: Symbol

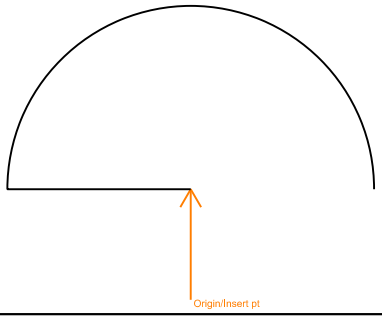
8 Architectural Lines Library

	
Architectural: INBATT LOOSE FILL BATT INSULATION Element type: Line	Architectural: WWFBRC WELDED WIRE FABRIC Element type: Line

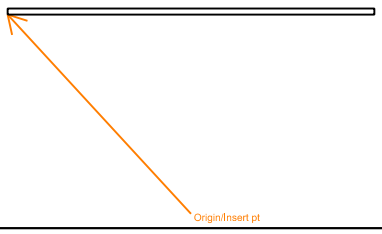
8 Architectural Objects Library

		
Architectural: BRKGL GLAZED BRICK Element type: Object	Architectural: CMU MASONRY UNIT Element type: Object	Architectural: CMUBLK CONC BLOCK 8X8X16 Element type: Object
		
Architectural: CMUCOR CONC BLOCK 8X8X16 COR. Element type: Object	Architectural: CMUEND CONC BLOCK 8X8X16 END Element type: Object	Architectural: CMUGL GLAZED CONCRETE BLOCK Element type: Object
		
Architectural: CMUSTR CONC BLOCK 8X8X16 STR. Element type: Object	Architectural: DOR18L LEFT DOOR 180 DEGREE SWING Element type: Object	Architectural: DOR18R RIGHT DOOR 180 DEGREE SWING Element type: Object

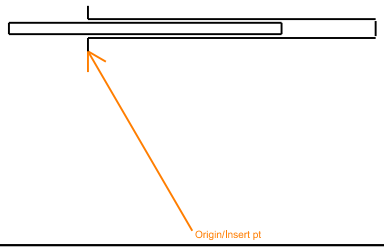
		
Architectural: DORBFL LEFT BIFOLD DOOR Element type: Object	Architectural: DORBFR RIGHT BIFOLD DOOR Element type: Object	Architectural: DORCPV DOOR CENTER PIVOT Element type: Object
		
Architectural: DORCYL DARK ROOM DOOR Element type: Object	Architectural: DORDBL LEFT DOUBLE DOOR Element type: Object	Architectural: DORDBR RIGHT DOUBLE DOOR Element type: Object
		
Architectural: DORDEL LEFT DOUBLE EGRESS DOOR Element type: Object	Architectural: DORDER RIGHT DOUBLE EGRESS DOOR Element type: Object	Architectural: DORFSL LEFT SINGLE FULL SWING DOOR Element type: Object



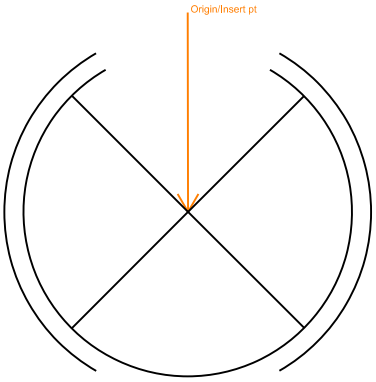
Architectural: DORFSR
RIGHT SINGLE FULL SWING DOO
Element type: Object



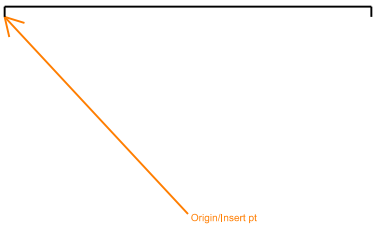
Architectural: DOROVH
OVERHEAD DOOR
Element type: Object



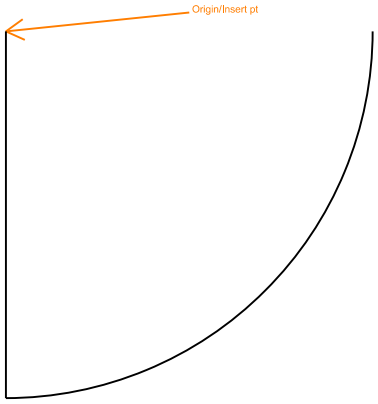
Architectural: DORPOC
DOOR POCKET
Element type: Object



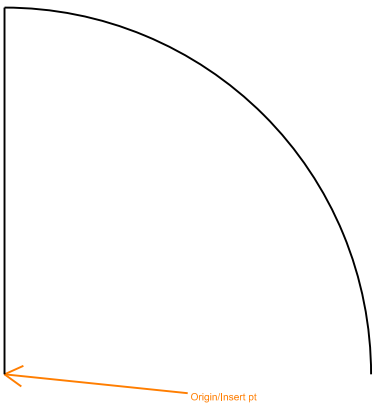
Architectural: DORREV
REVOLVING DOOR
Element type: Object



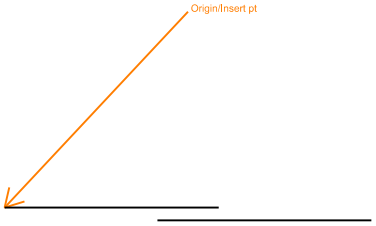
Architectural: DORRUP
ROLL UP DOOR
Element type: Object



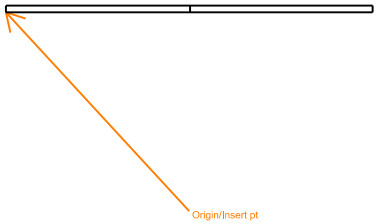
Architectural: DORSHL
LEFT SINGLE HINGED DOOR
Element type: Object



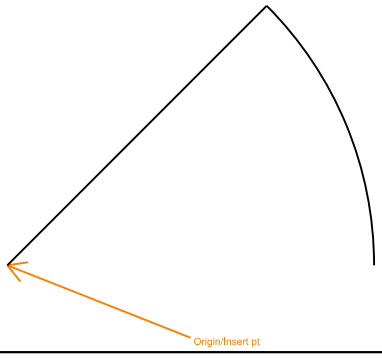
Architectural: DORSHR
RIGHT SINGLE HINGED DOOR
Element type: Object



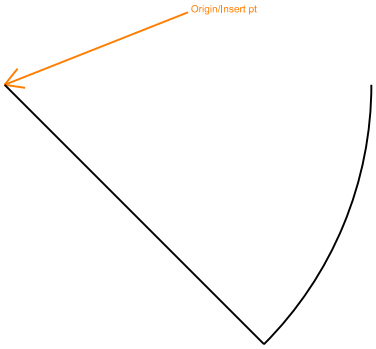
Architectural: DORSLD
SLIDING DOOR
Element type: Object



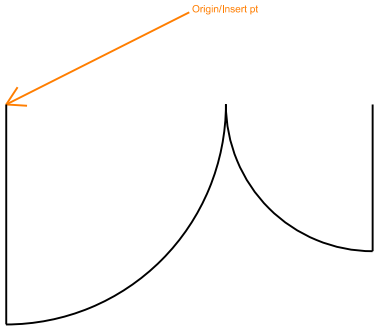
Architectural: DORSLS
SLIDING SURFACE DOOR
Element type: Object



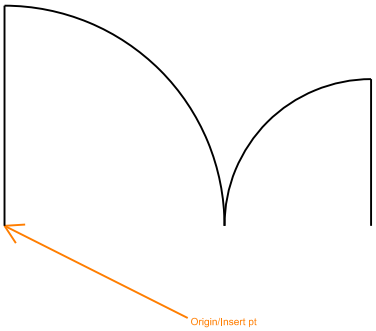
Architectural: DORSPL
LEFT SINGLE PIVOT DOOR
Element type: Object



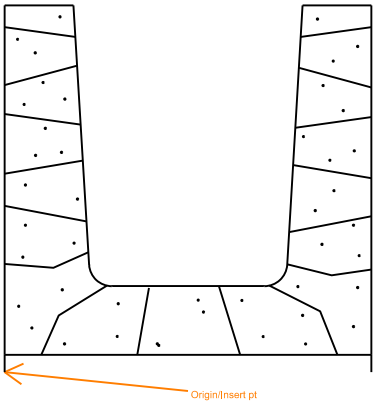
Architectural: DORSPR
RIGHT SINGLE PIVOT DOOR
Element type: Object



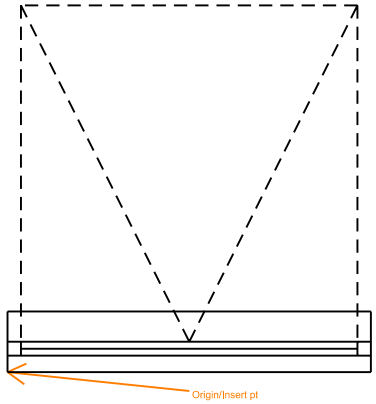
Architectural: DORUDL
LEFT UNEVEN DOUBLE DOOR
Element type: Object



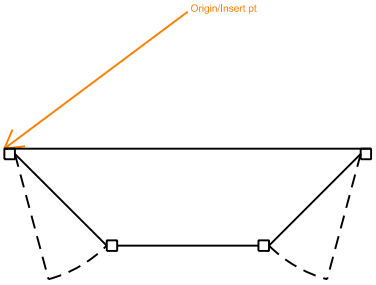
Architectural: DORUDR
RIGHT UNEVEN DOUBLE DOOR
Element type: Object



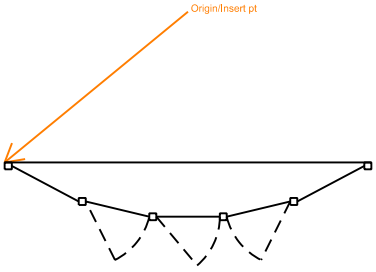
Architectural: LINTEL
CONC BEAM BOND LINTEL
Element type: Object



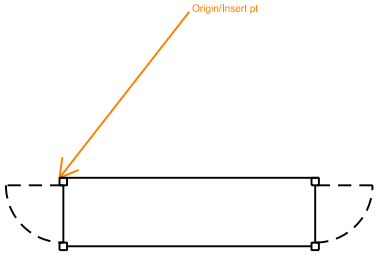
Architectural: WINAWN
WINDOW AWNING
Element type: Object



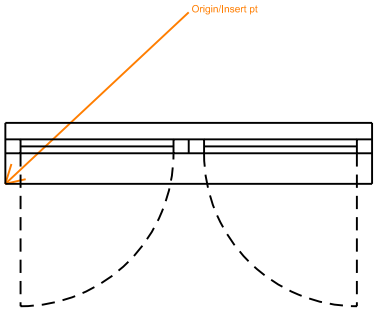
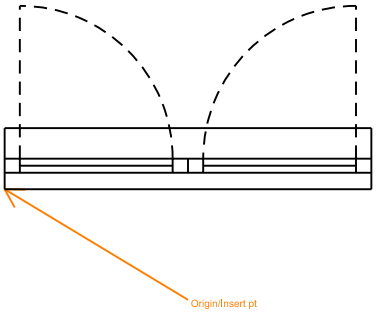
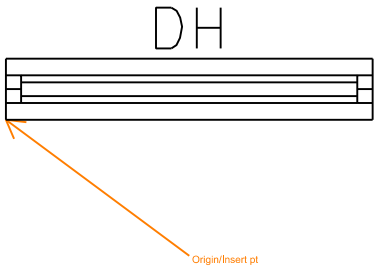
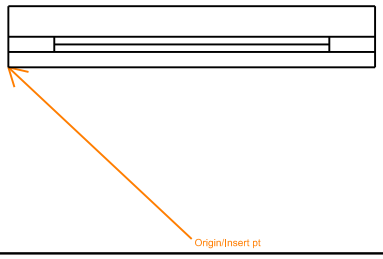
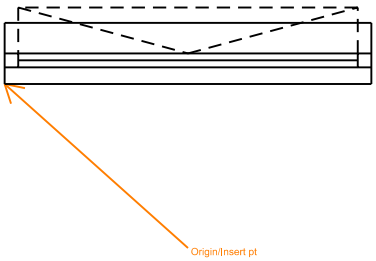
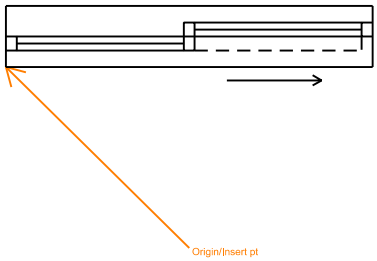
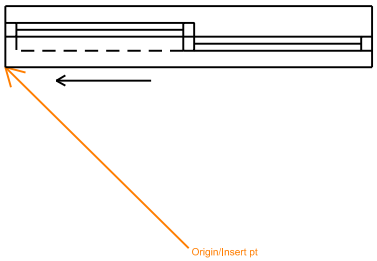
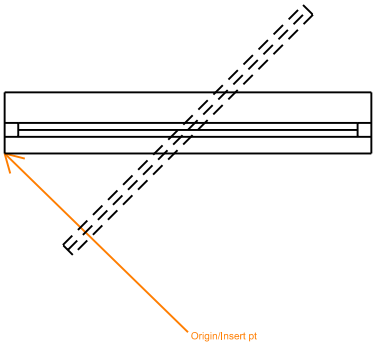
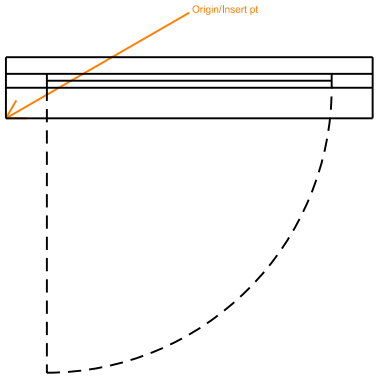
Architectural: WINBAY
PROJECTED BAY WINDOW
Element type: Object

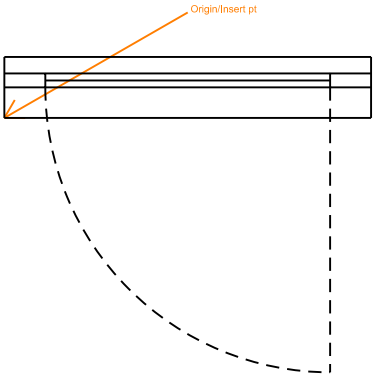
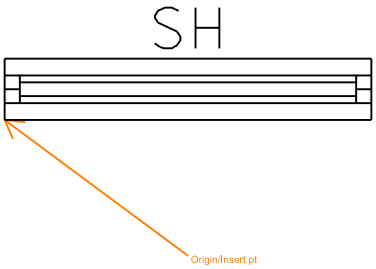


Architectural: WINBOW
PROJECTED BOW WINDOW
Element type: Object

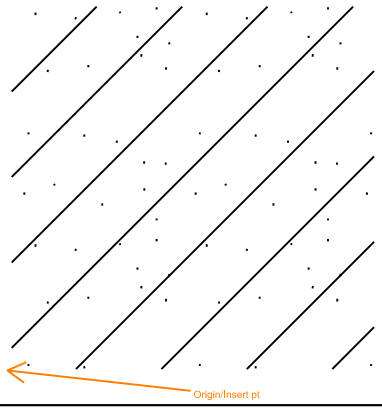


Architectural: WINBOX
PROJECTED BOX WINDOW
Element type: Object

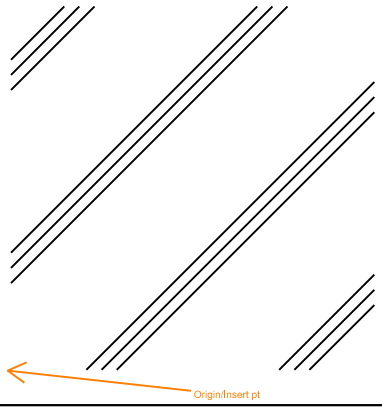
		
Architectural: WINDCI WNDW DBLCASEMNT INWRD OPEN Element type: Object	Architectural: WINDCO WNDW DBLCASEMNT OUTWARD OPE Element type: Object	Architectural: WINDH DOUBLE HUNG WINDOW Element type: Object
		
Architectural: WINFIX FIXED 1 FOOT WINDOW Element type: Object	Architectural: WINJAL JALOUSIE WINDOW Element type: Object	Architectural: WINOSL SLIDNG WNDW LFT OPRTNG SASH Element type: Object
		
Architectural: WINOSR SLDNG WNDW RGHT OPRTNG SASH Element type: Object	Architectural: WINPIV PIVOT WINDOW Element type: Object	Architectural: WINSCL WNDWSNGLCASEMNTLEFTJAMBHING Element type: Object

	
Architectural: WINSCR WNDWSNGLCASEMNTRGHTJAMBHING Element type: Object	Architectural: WINSH SINGLE HUNG WINDOW Element type: Object

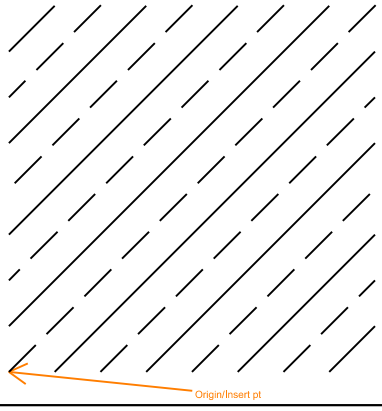
8 Architectural Patterns Library



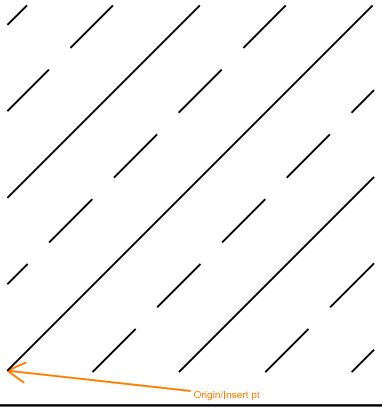
Architectural: ADOBE
MSNRY ADOBE RAMMED EARTHPTN
Element type: Pattern



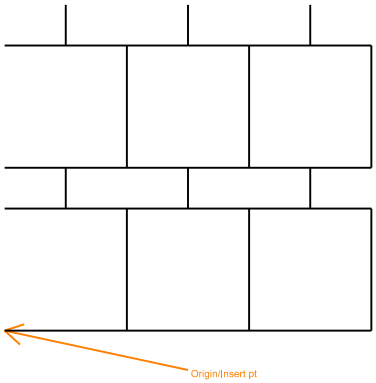
Architectural: ALUMIN
ALUMINUM PATTERN
Element type: Pattern



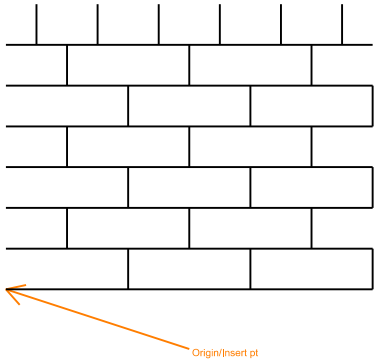
Architectural: ASHLER
STONE ASHLER PATTERN
Element type: Pattern



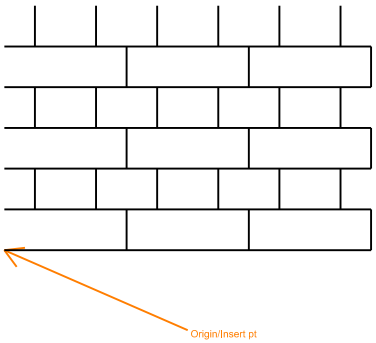
Architectural: BRASS
BRONZE BRASS PATTERN
Element type: Pattern



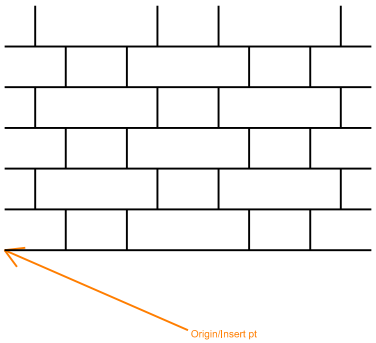
Architectural: BRBLCO
COURSED BRICK BLK PTN
Element type: Pattern



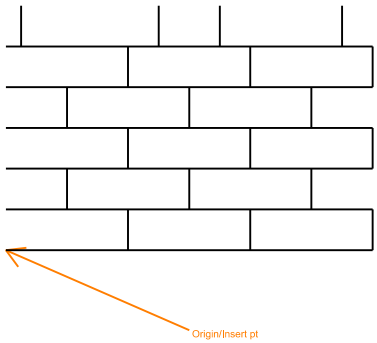
Architectural: BRCOBD
COMMON BOND BRICK PTN
Element type: Pattern



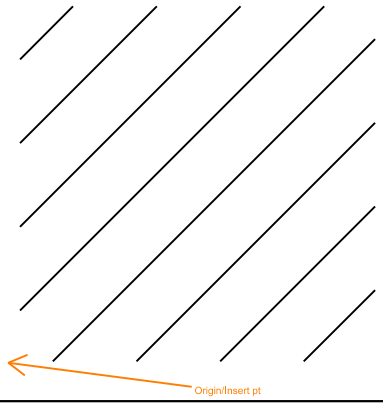
Architectural: BRENBD
ENGLISH BOND BRICK PTN
Element type: Pattern



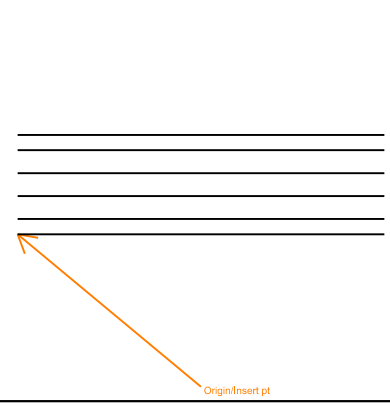
Architectural: BRFLBD
FLEMISH BOND BRICK PTN
Element type: Pattern



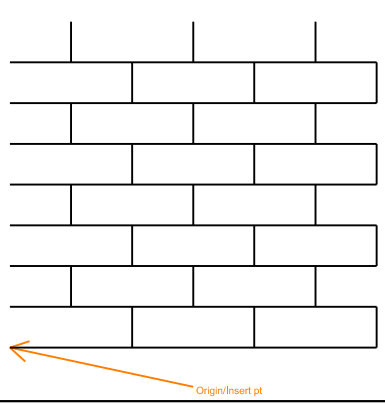
Architectural: BRFLCB
FLEMISH COM BOND PTN
Element type: Pattern



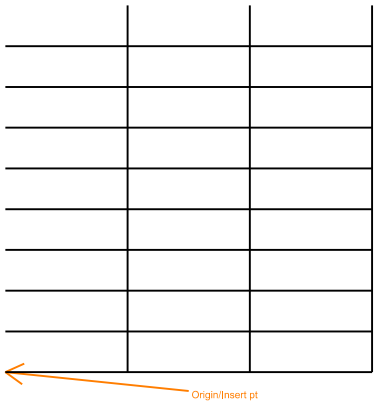
Architectural: BRKCF
COMMON FACE BRICK PTN
Element type: Pattern



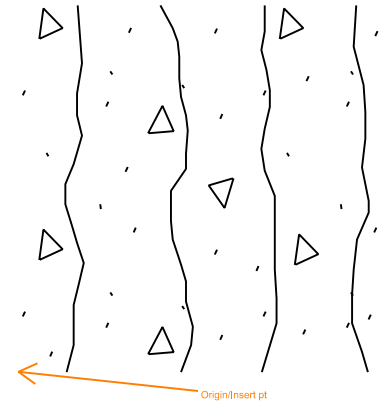
Architectural: BRKELE
BRICK ELEVATION PTN
Element type: Pattern



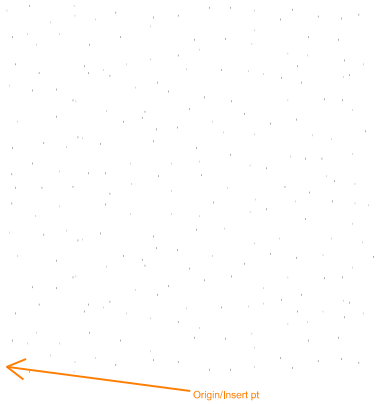
Architectural: BRRNBD
BRICK RUNNING BOND PTN
Element type: Pattern



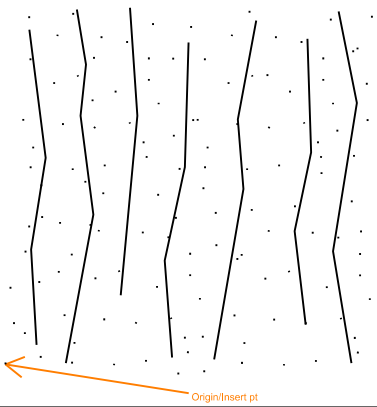
Architectural: BRSTBD
BRICK STACK BOND PATTERN
Element type: Pattern



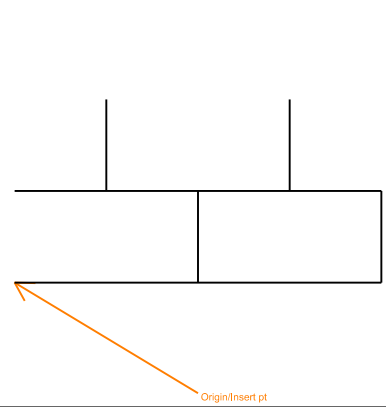
Architectural: CCBSS
CAST CONC BLK SM SCALE PTN
Element type: Pattern



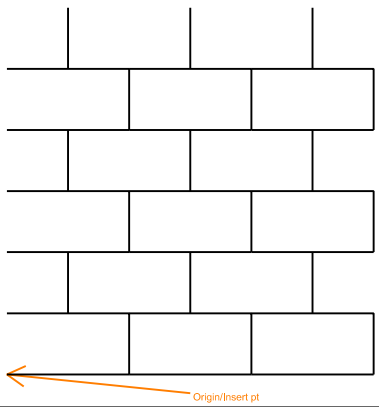
Architectural: CCELEV
CONC CEMENT ELEV PTN
Element type: Pattern



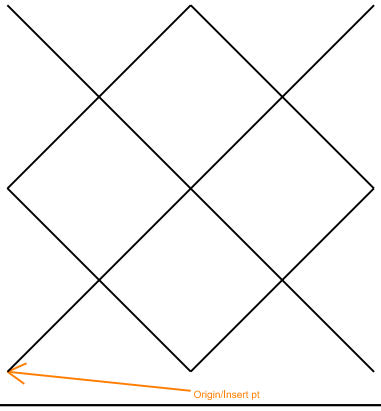
Architectural: CDTOP
CEMENTITIOUSDECK TOPPINGPTN
Element type: Pattern



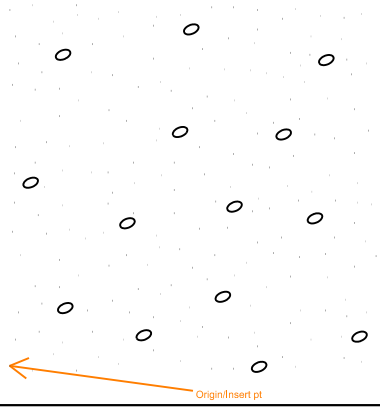
Architectural: CMUBP
CMU BLOCK PATTERN
Element type: Pattern



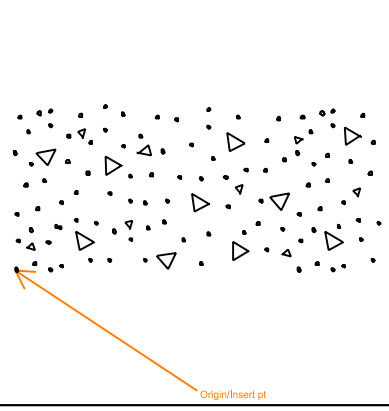
Architectural: CMUELB
ELEVATION BLOCK PTN
Element type: Pattern



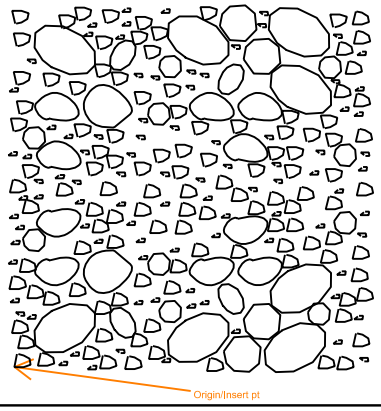
Architectural: CONBLK
CONCRETE BLOCK PATTERN
Element type: Pattern



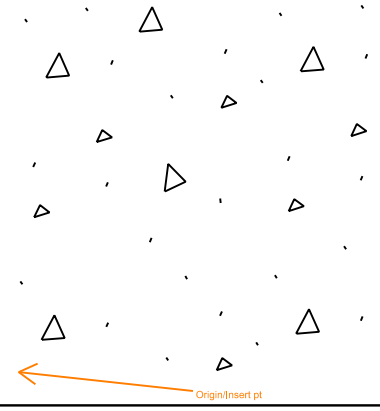
Architectural: CONCCN
CONCRETE CINDER
Element type: Pattern



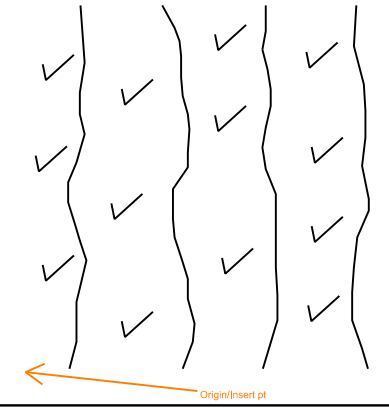
Architectural: CONCLW
CONCRETE LIGHT WEIGHT
Element type: Pattern



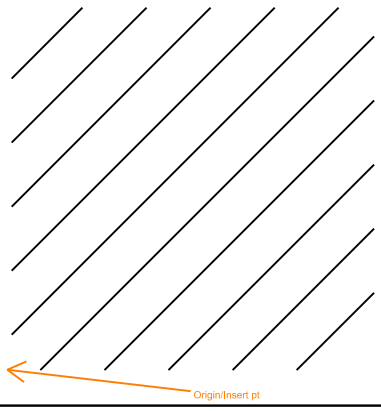
Architectural: CONCPR
PRECAST CASTIN PLACECONCPTN
Element type: Pattern



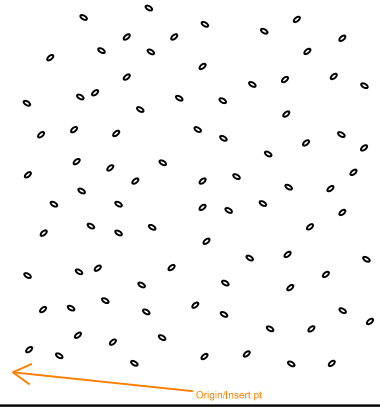
Architectural: CONCST
CONCRETE STONE
Element type: Pattern



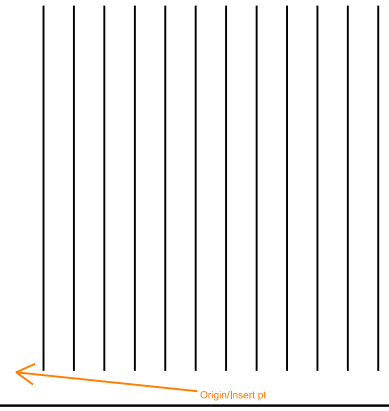
Architectural: CONPBS
PUMICE BLK CONC SMSCALE PTN
Element type: Pattern



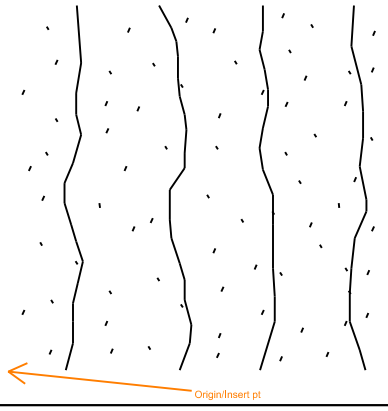
Architectural: CSTIRN
CAST IRON PATTERN
Element type: Pattern



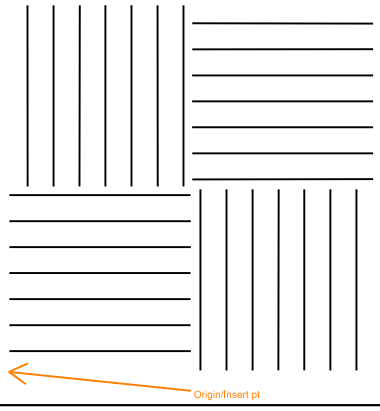
Architectural: CSTSTN
CAST STONE PATTERN
Element type: Pattern



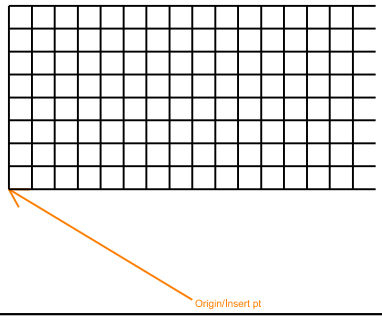
Architectural: CTILSS
CERAMIC TILE SM SCALE
Element type: Pattern



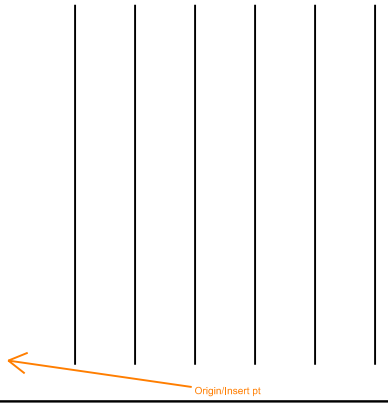
Architectural: CUTSTN
CUT STONE PATTERN
Element type: Pattern



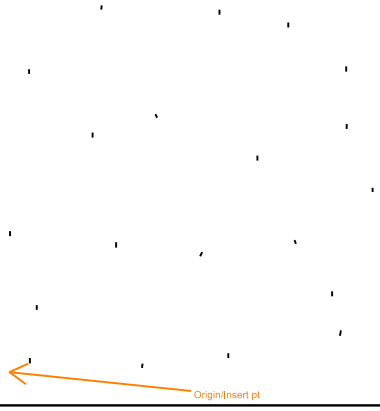
Architectural: EARTH
COMPACTD FILL EARTHWRK PTN
Element type: Pattern



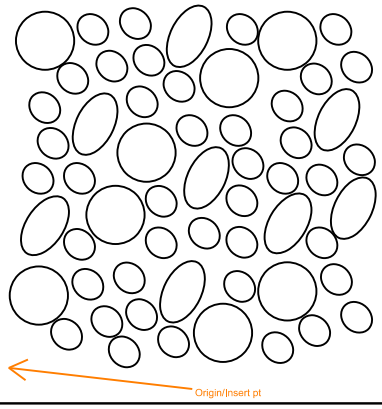
Architectural: FIBFSF
FIBROUS FIRE SAFING PTN
Element type: Pattern



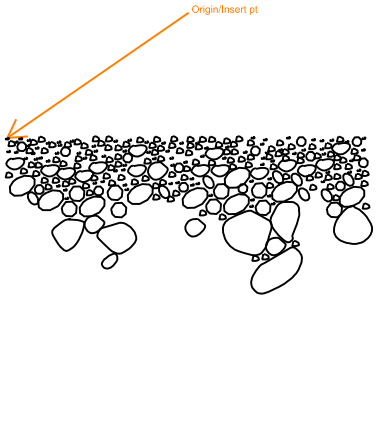
Architectural: GLASS
STRUCTURAL GLASS PTN
Element type: Pattern



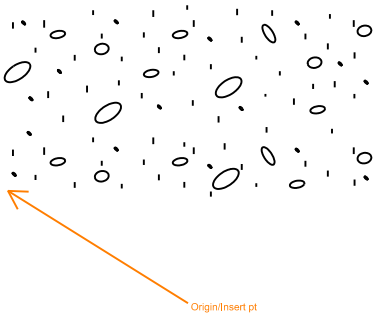
Architectural: GROUT
GROUT
Element type: Pattern



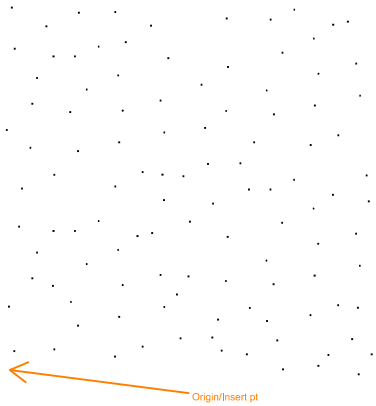
Architectural: GRVCRE
CRUSHED ROCK EARTH GRVL PTN
Element type: Pattern



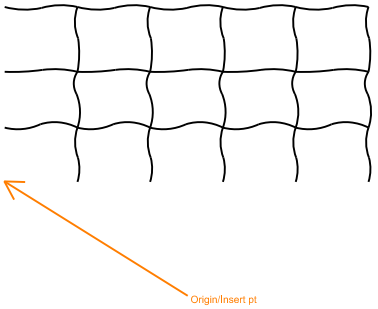
Architectural: GRVPFE
POROUSFILLGRAVLEARTHWRKPTN
Element type: Pattern



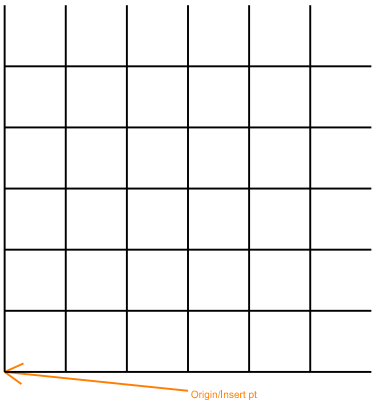
Architectural: GRVSCL
SAND CLAY GRAVEL PATTERN
Element type: Pattern



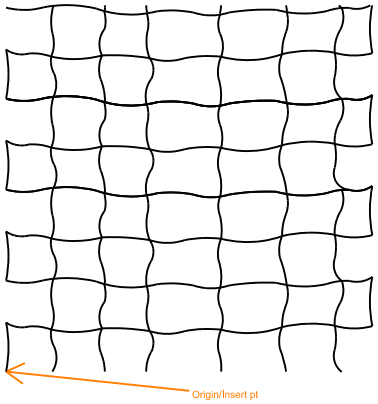
Architectural: GYPPPE
GYPSUM PLASTERPLAN ELEV PTN
Element type: Pattern



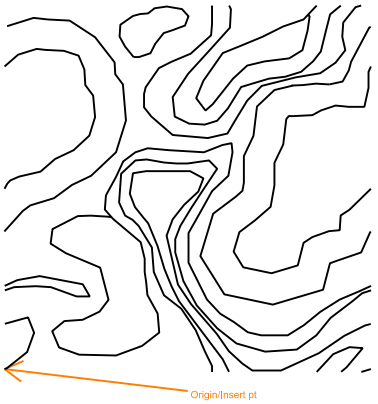
Architectural: INSQLT
LRGSCALE INSULATNQUILTSPTN
Element type: Pattern



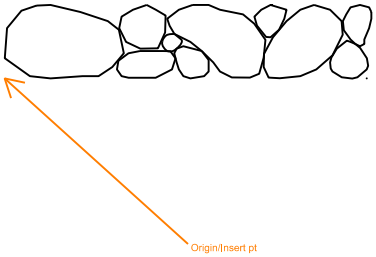
Architectural: INSRIG
RIGID INSULATION PATTERN
Element type: Pattern



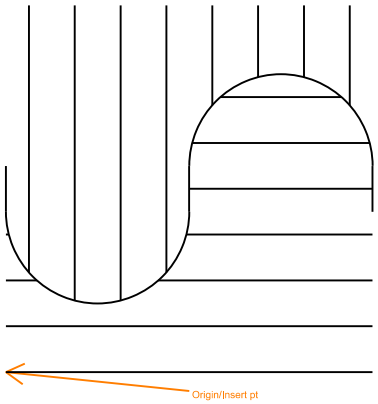
Architectural: INSSCM
SOLIDCORKMAGNESIA INSULPTN
Element type: Pattern



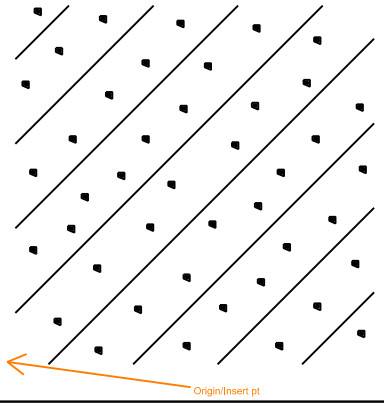
Architectural: MARBL2
MARBLE STONE PLAN VIEW
Element type: Pattern



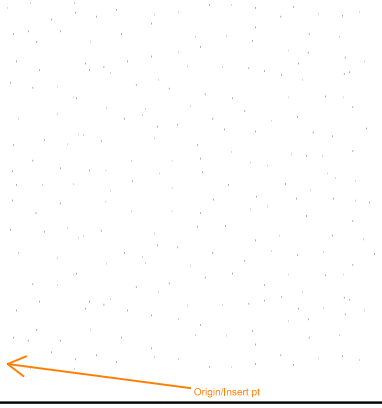
Architectural: RIPRAP
RIPRAP PATTERN
Element type: Pattern



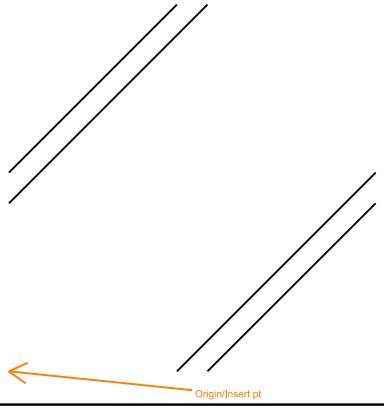
Architectural: ROCK
ROCK EARTHWORK PATTERN
Element type: Pattern



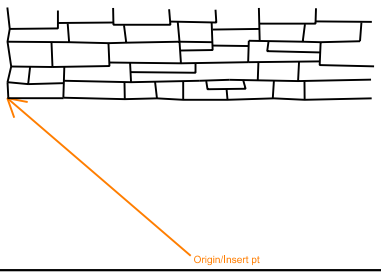
Architectural: RUBBLE
STONE RUBBLE PATTERN
Element type: Pattern



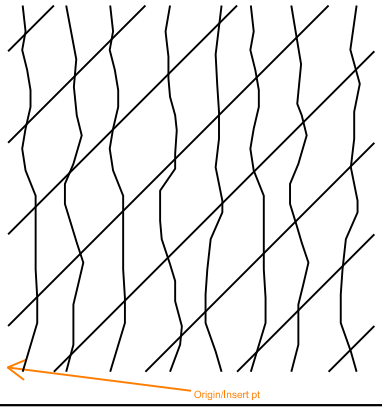
Architectural: SAND
SAND PATTERN
Element type: Pattern



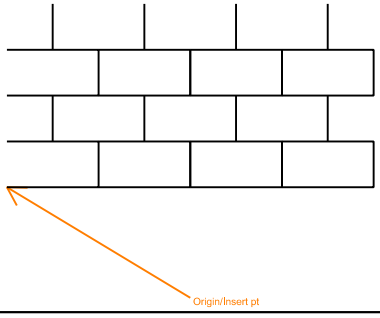
Architectural: STEEL
STEEL OTHER METALS PATTERN
Element type: Pattern



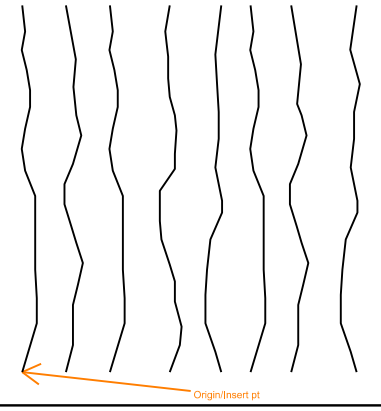
Architectural: STNSQR
SQUARED STONE PATTERN
Element type: Pattern



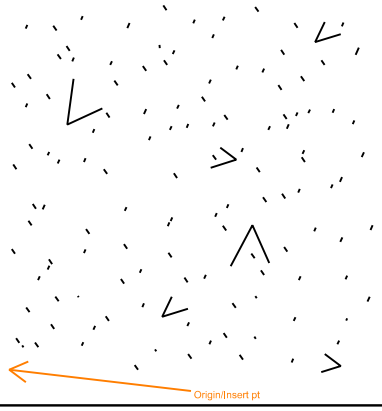
Architectural: TCBCSS
TERACOTA SMSCALE BRICKCOTA
Element type: Pattern



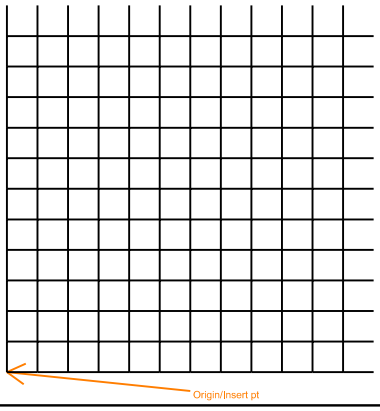
Architectural: TCELEV
TERRA COTTA ELEVATION PTN
Element type: Pattern



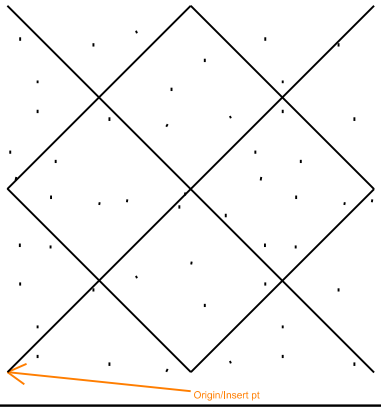
Architectural: TCUSS
TERACOTA SMSCALE UNGLZDPTN
Element type: Pattern



Architectural: TERRZO
TERRAZZO PATTERN
Element type: Pattern

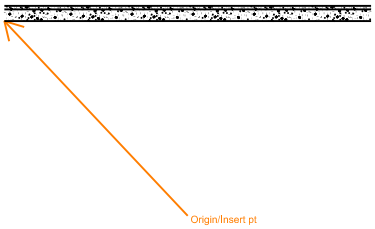


Architectural: TILCER
CERAMIC TILE ELEVATION PTN
Element type: Pattern

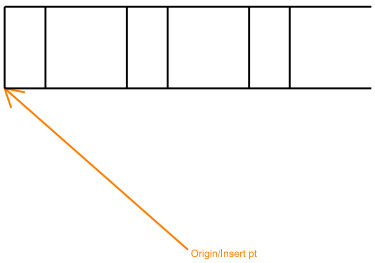


Architectural: TILESF
STRUCTURAL FACING TILE PTN
Element type: Pattern

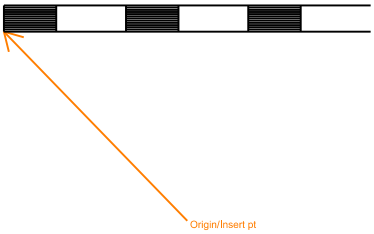
8 Architectural Symbols Library



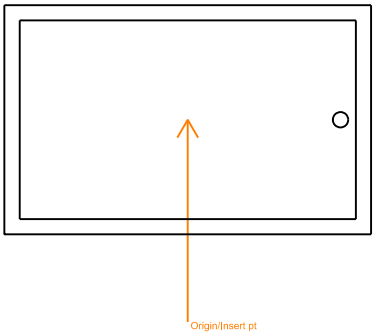
Architectural: ARCPBW
ARCHTCTRL PARTICLEBRD WDWK
Element type: Symbol



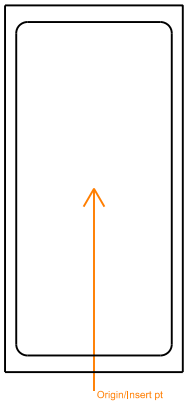
Architectural: ASBDLS
LARGE SCALE ASBESTOS BOARD
Element type: Symbol



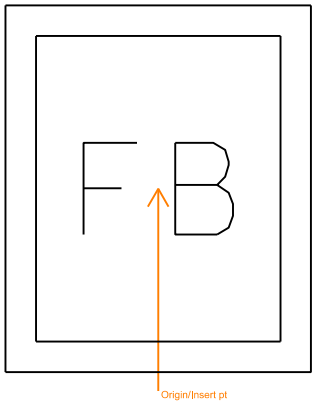
Architectural: ASBDSS
SMALL SCALE ASBESTOS BOARD
Element type: Symbol



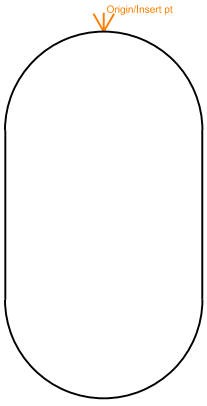
Architectural: BATHCO
CORNER BATH
Element type: Symbol



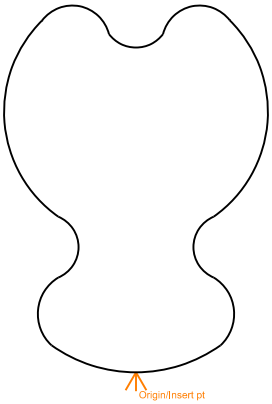
Architectural: BATHEM
EMERGENCY BATH
Element type: Symbol



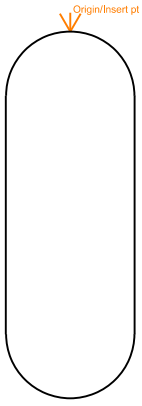
Architectural: BATHFT
FOOT BATH
Element type: Symbol



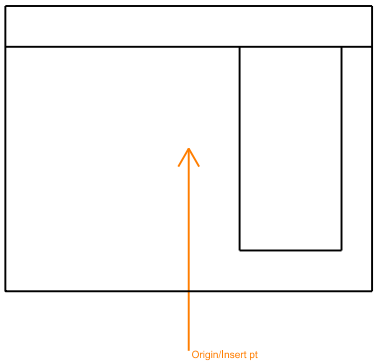
Architectural: BATHHA
HYDROTHERAPY ARM BATH
Element type: Symbol



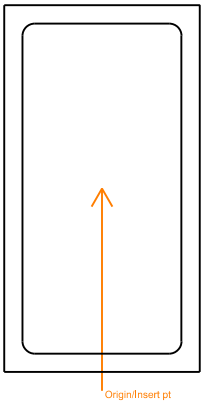
Architectural: BATHHH
HYDROTHERAPY HUBBARD BATH
Element type: Symbol



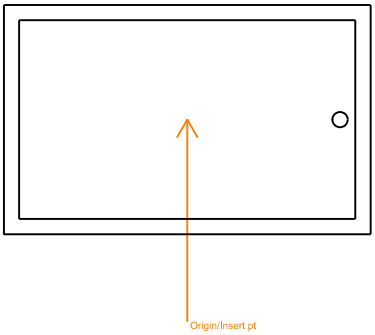
Architectural: BATHHL
HYDROTHERAPY LEG BATH
Element type: Symbol



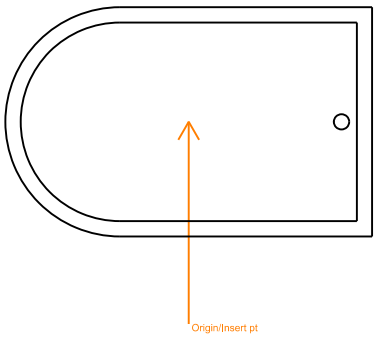
Architectural: BATHIF
INFANT BATH
Element type: Symbol



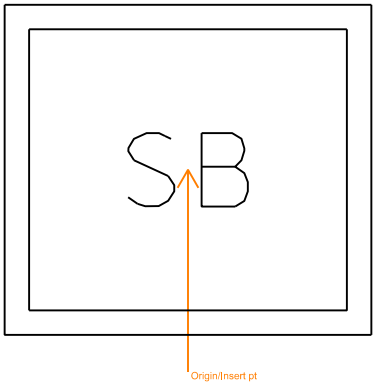
Architectural: BATHIN
INSTITUTIONAL BATH
Element type: Symbol



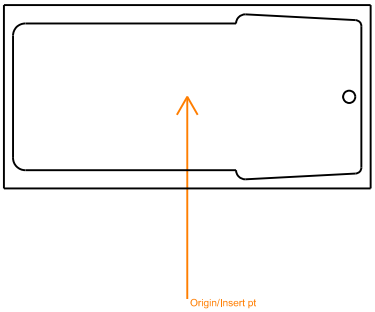
Architectural: BATHRC
RECESSED BATH
Element type: Symbol



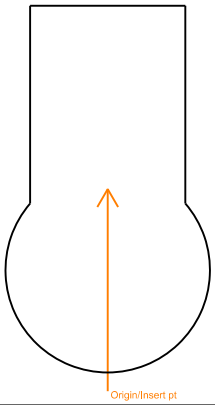
Architectural: BATHRR
ROLL RIM BATH
Element type: Symbol



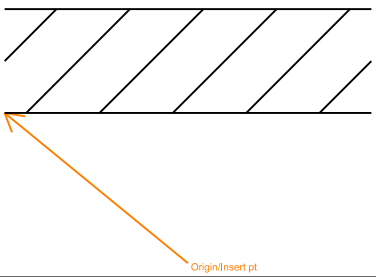
Architectural: BATHSZ
SITZ BATH
Element type: Symbol



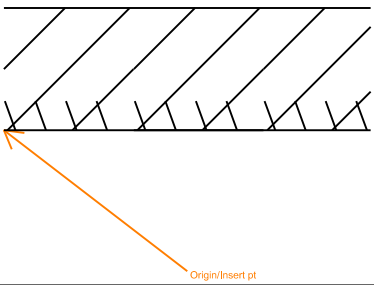
Architectural: BATHWP
WHIRLPOOL BATH
Element type: Symbol



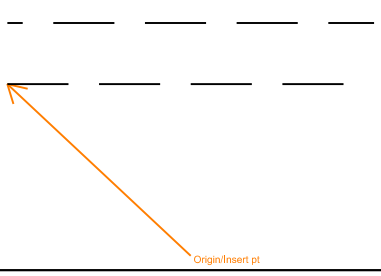
Architectural: BIDET
WATERCLOSET BIDET
Element type: Symbol



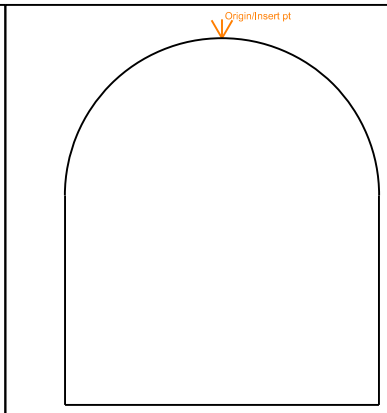
Architectural: BRFACC
BRICK FACE ON COMMON
Element type: Symbol



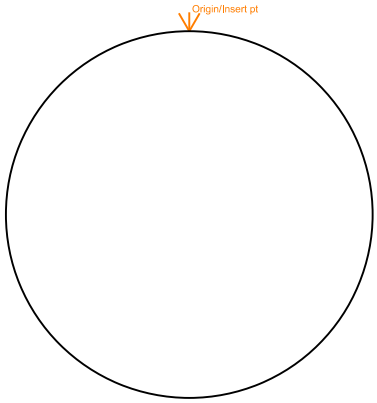
Architectural: BRFIRE
FIRE BRICK
Element type: Symbol



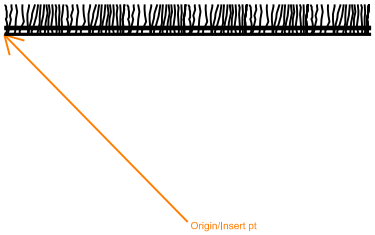
Architectural: BSSFLG
BLUESTN SLT SOAPSTN FLAGING
Element type: Symbol



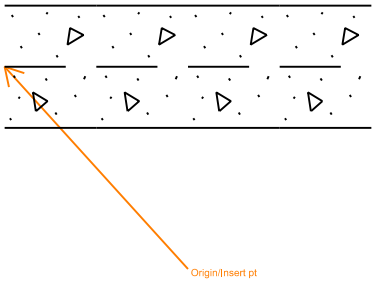
Architectural: CANWCT
CAN WASHER CABINET TYPE
Element type: Symbol



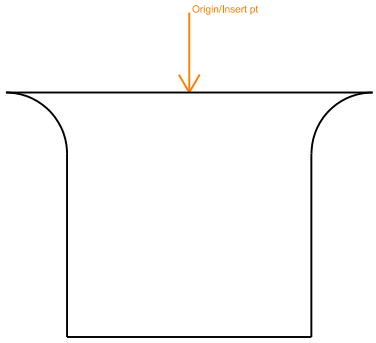
Architectural: CANWDT
CAN WASHER DISH TYPE
Element type: Symbol



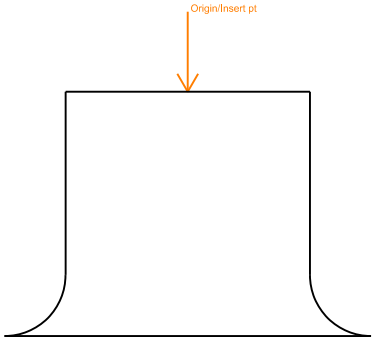
Architectural: CARPET
CARPET AND PAD
Element type: Symbol



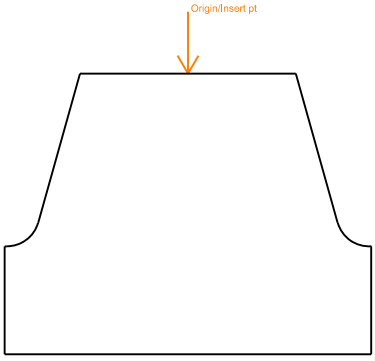
Architectural: CPLANK
CONCRETE PLANK
Element type: Symbol



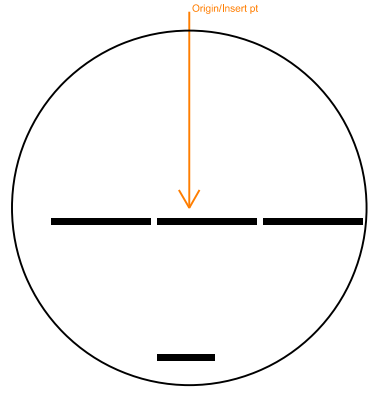
Architectural: DFPROJ
DRINK FOUNTAN PROJECTNG TYP
Element type: Symbol



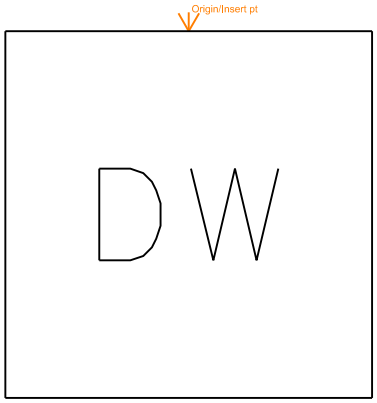
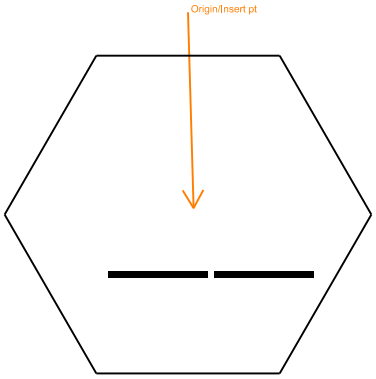
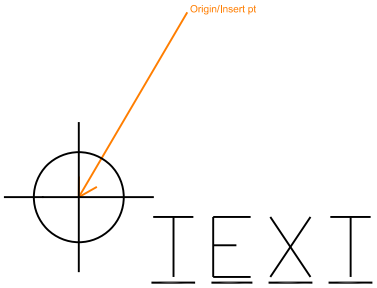
Architectural: DFRECS
DRINK FOUNTAIN RECESSED TYP
Element type: Symbol



Architectural: DFSREC
DRINK FOUNTN SEMIRECSSD TYP
Element type: Symbol



Architectural: DOORID
DOOR OPENING IDENTIFIER
Element type: Symbol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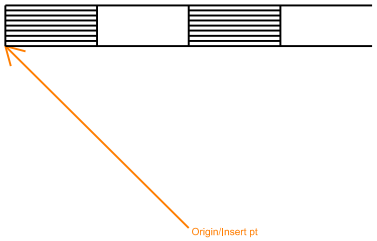
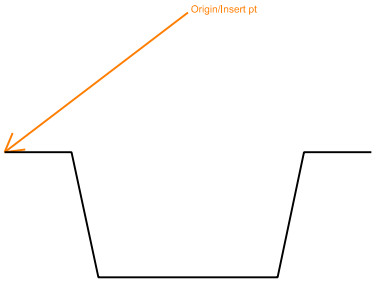
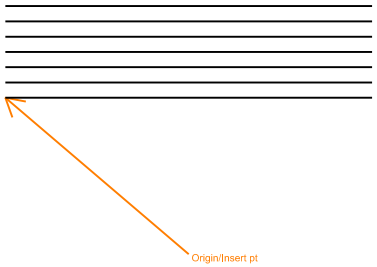
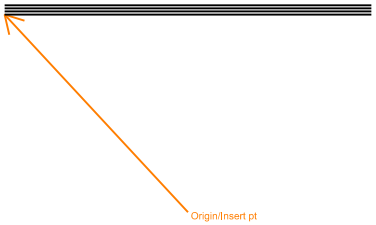
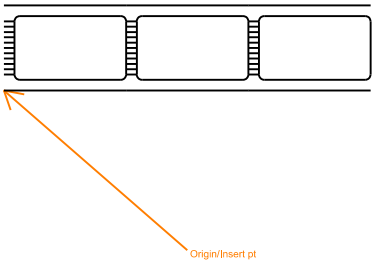
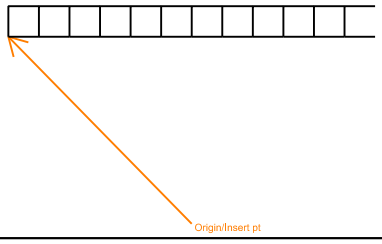
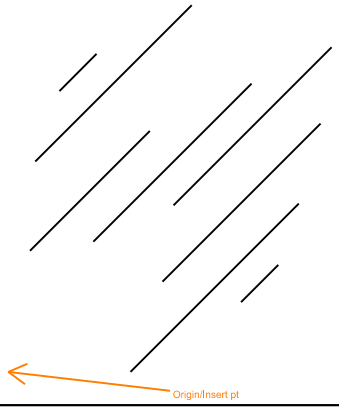
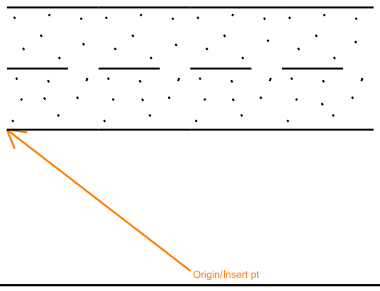
		
Architectural: FLRRPL FLOORINGRESILIENT PLSTC LAM Element type: Symbol	Architectural: FURCHH FURRING CHANNEL HAT Element type: Symbol	Architectural: FURCHN FURRING CHANNEL Element type: Symbol
		
Architectural: GLASLS LARGE SCALE GLASS Element type: Symbol	Architectural: GLASSS SMALL SCALE GLASS Element type: Symbol	Architectural: GLBLLS GLASS BLOCK LARGE SCALE Element type: Symbol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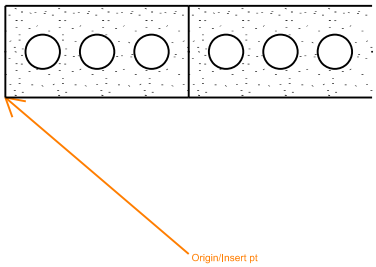
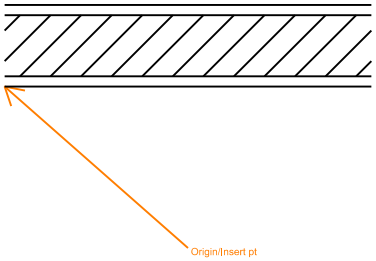
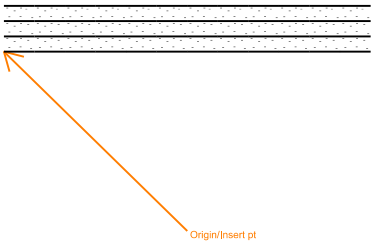
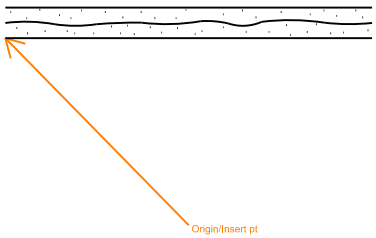
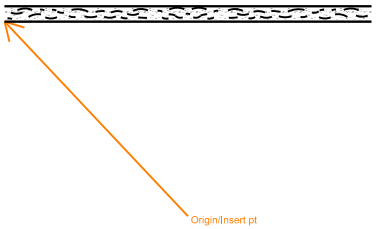
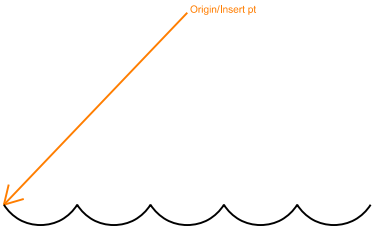
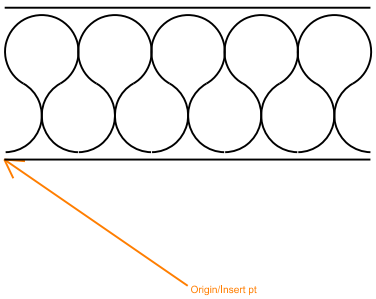
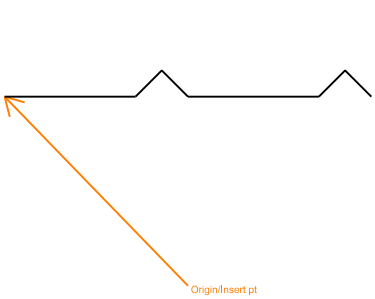
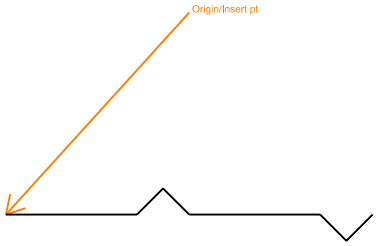
		
Architectural: GYPBLK GYPSUM BLOCK TILE Element type: Symbol	Architectural: GYPPOM GYPSUM PLASTER ON MASONRY Element type: Symbol	Architectural: GYPPPB GYPSUM PLASTER PARTICLE BR Element type: Symbol
		
Architectural: GYPSPP GYPSUMSOLIDPLASTERPARTITION Element type: Symbol	Architectural: GYPWBD GYPSUM WALLBOARD FINISHES Element type: Symbol	Architectural: INFBSS SMSCALE FLXBL BLANKET INSUL Element type: Symbol



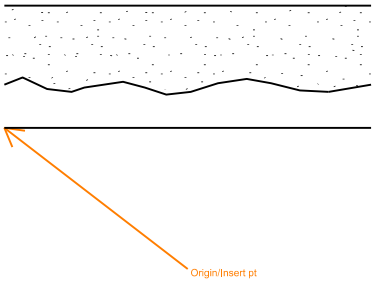
Architectural: INLFLS
LRGSCALE LOOSE FILL INSULAT
Element type: Symbol



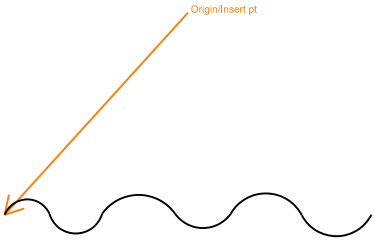
Architectural: INS1RM
INSUL REFLCTVE MTL ON 1 SDE
Element type: Symbol



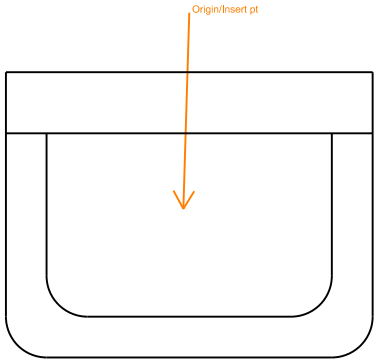
Architectural: INS2RM
INSUL RFLCTVCRTN 2SDS SMSC
Element type: Symbol



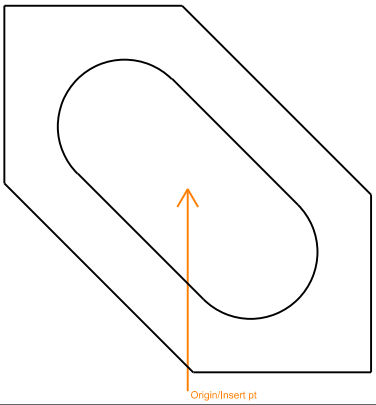
Architectural: INSFOM
SPRAY FOAM INSULATION
Element type: Symbol



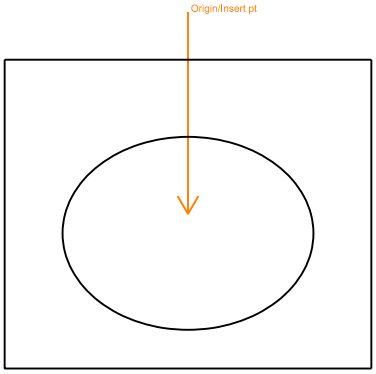
Architectural: INSTND
INSUL TYPE NOT DETER LRGSC
Element type: Symbol



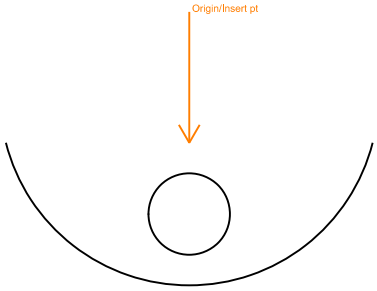
Architectural: LAVBCK
BACK LAVATORY
Element type: Symbol



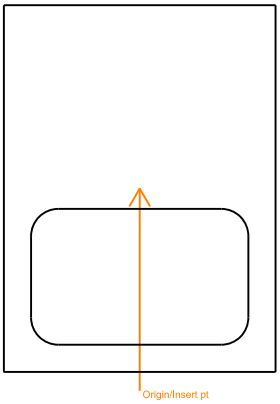
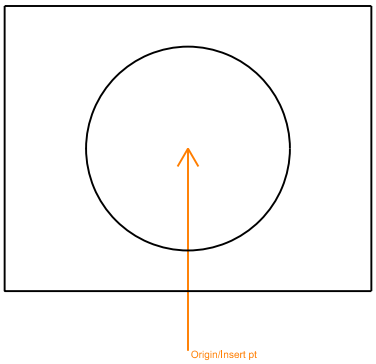
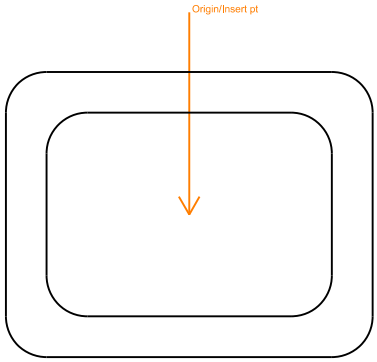
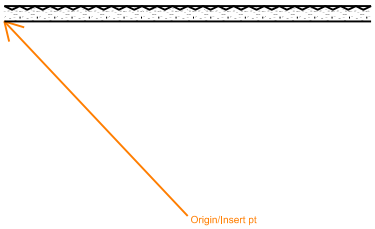
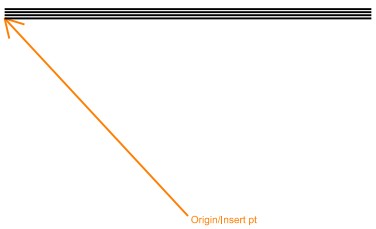
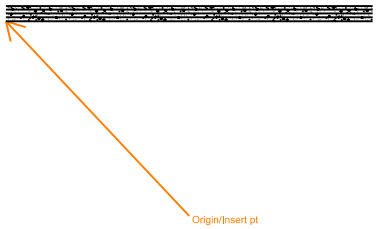
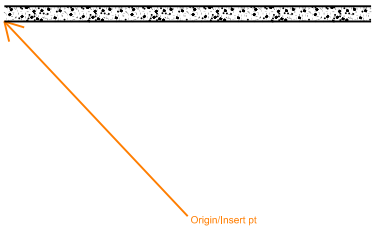
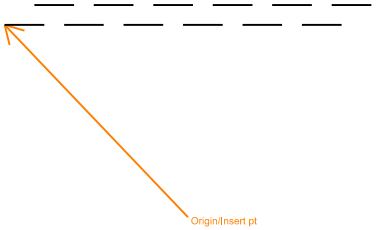
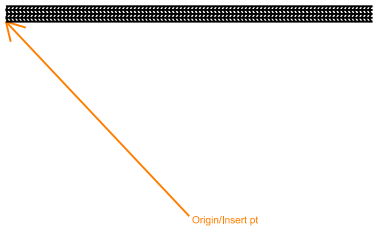
Architectural: LAVCOR
CORNER LAVATORY
Element type: Symbol

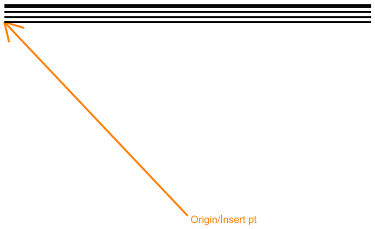


Architectural: LAVCOU
LAVATORY IN COUNTER
Element type: Symbol

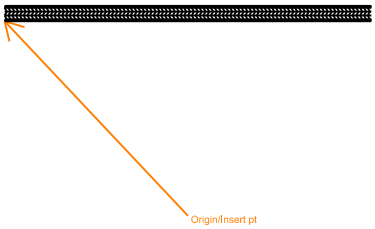


Architectural: LAVDNT
DENTAL LAVATORY
Element type: Symbol

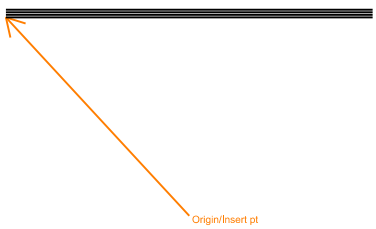
		
Architectural: LAVHND HANDICAPPED LAVATORY Element type: Symbol	Architectural: LAVMDM MEDICAL MANICURE LAVATORY Element type: Symbol	Architectural: LAVSLB SLAB TYPE LAVATORY Element type: Symbol
		
Architectural: MTLLPL METAL LATH AND PLASTER Element type: Symbol	Architectural: MTLSHT METALSHEET ALLMETALSSMSCALE Element type: Symbol	Architectural: ORISTB ORIENTED STRAND BOARD Element type: Symbol
		
Architectural: PARTBD PARTICLEBOARD Element type: Symbol	Architectural: PLASTC PLASTIC FINISHES Element type: Symbol	Architectural: PLPLLS LRGSCALE PLASTIC ON PLYWOOD Element type: Symbol



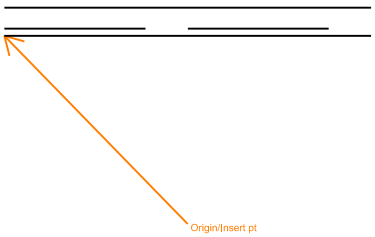
Architectural: PLPLSS
SMSCALE PLASTIC ON PLYWOOD
Element type: Symbol



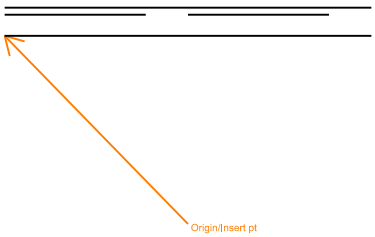
Architectural: PLYWLS
LARGE SCALE PLYWOOD
Element type: Symbol



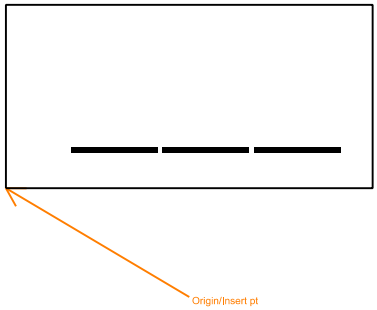
Architectural: PLYWSS
SMALL SCALE PLYWOOD
Element type: Symbol



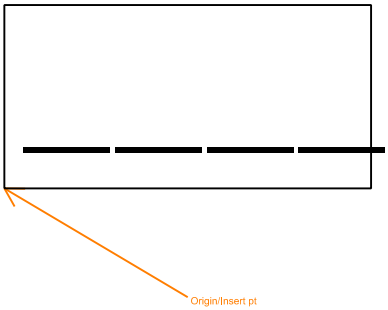
Architectural: RBIILS
RGD BRD INTRR INSUL LRGSC
Element type: Symbol



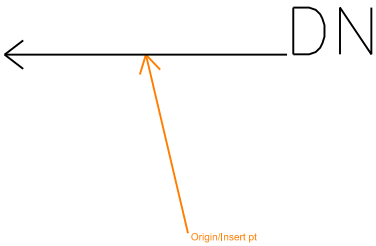
Architectural: RBISLS
INSUL RGDBRD ASSHTHNG LRGSC
Element type: Symbol



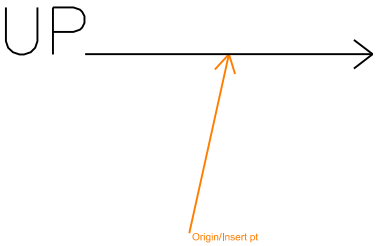
Architectural: ROMID3
ROOM IDENTIFIER 3CHARACTERS
Element type: Symbol



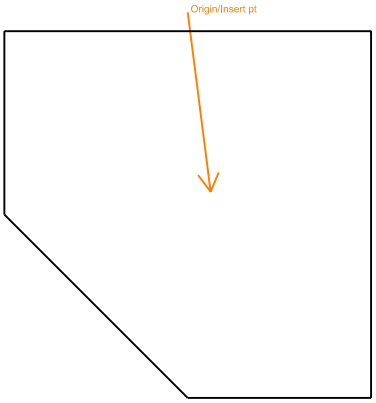
Architectural: ROMID4
ROOM IDENTIFIER 4CHARACTERS
Element type: Symbol



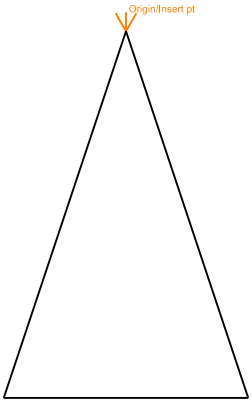
Architectural: SDIRLD
STAIR DIRECTION LINE DOWN
Element type: Symbol



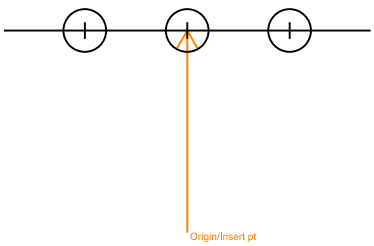
Architectural: SDIRLU
STAIR DIRECTION LINE UP
Element type: Symbol



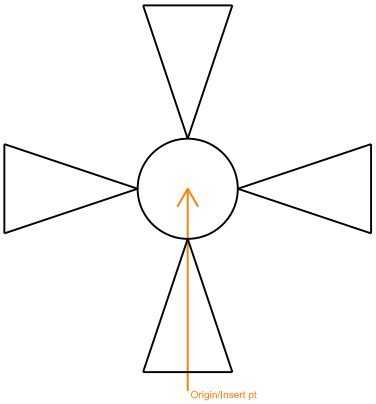
Architectural: SHWRCO
CORNER SHOWER
Element type: Symbol



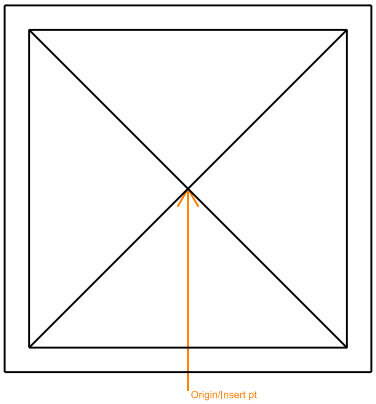
Architectural: SHWRHD
SHOWER HEAD
Element type: Symbol



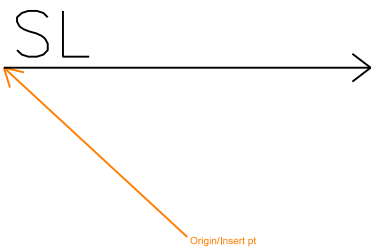
Architectural: SHWROG
SHOWER OVERHEAD GANG
Element type: Symbol



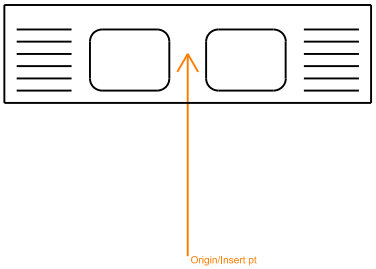
Architectural: SHWRPG
SHOWER PEDESTAL GANG
Element type: Symbol



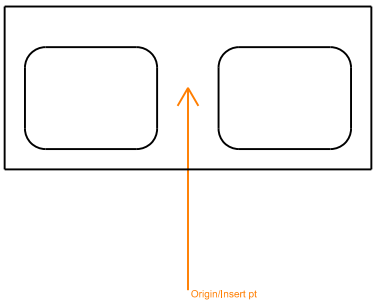
Architectural: SHWRST
SHOWER STALL
Element type: Symbol



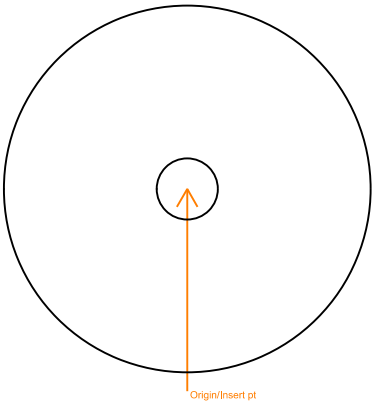
Architectural: SLOPE
DIRECTION OF LINE SLOPE
Element type: Symbol



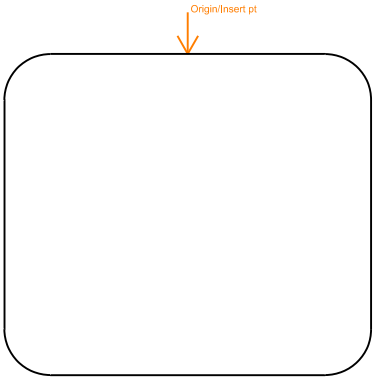
Architectural: SNK2BD
DBLE SINK W DRAINBOARDS
Element type: Symbol



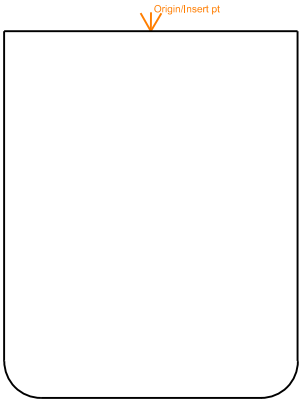
Architectural: SNK2CT
SINK TWO COMPARTMENT TYPE
Element type: Symbol



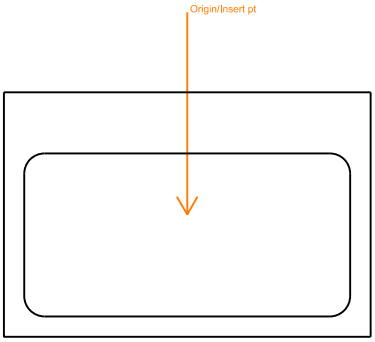
Architectural: SNKCWT
CIRCULAR WASH TYPE SINK
Element type: Symbol



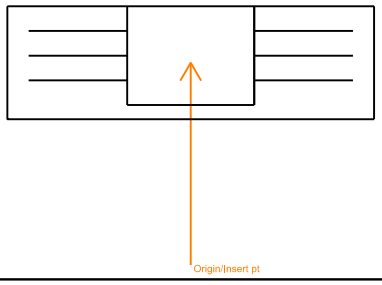
Architectural: SNKDSP
SINK DISPOSER
Element type: Symbol



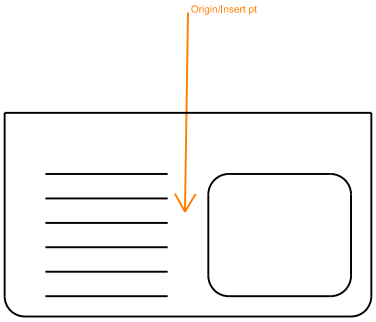
Architectural: SNKFRC
FLUSHING RIM CLINICAL SINK
Element type: Symbol



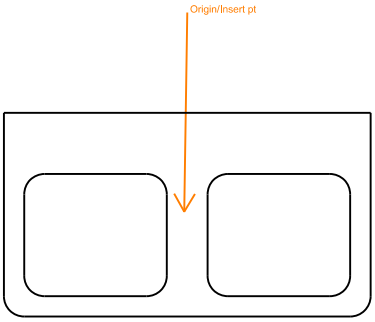
Architectural: SNKGEN
GENERAL SINK
Element type: Symbol



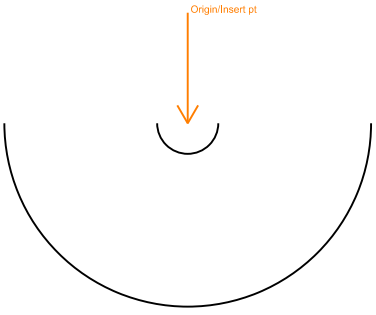
Architectural: SNKKLR
KITCH SNK WL AND R DRAIN BD
Element type: Symbol



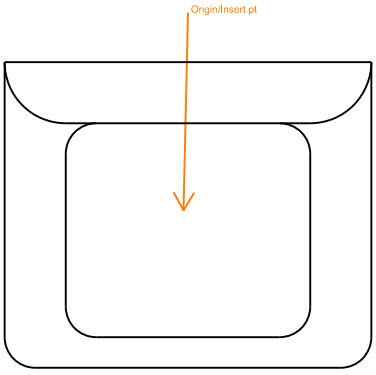
Architectural: SNKLDB
SINK W LEFT DRAINBOARD
Element type: Symbol



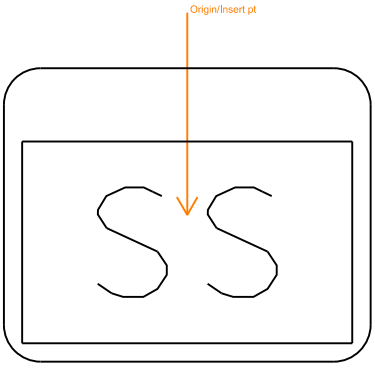
Architectural: SNKLTR
SINK LAUNDRY TRAY
Element type: Symbol



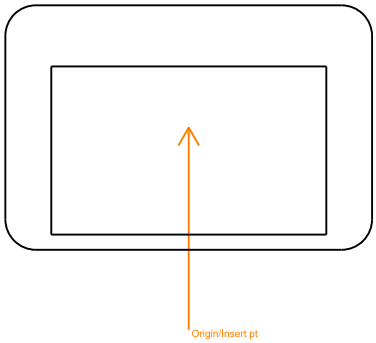
Architectural: SNKSCW
SEMICIRULAR WASH SINK
Element type: Symbol



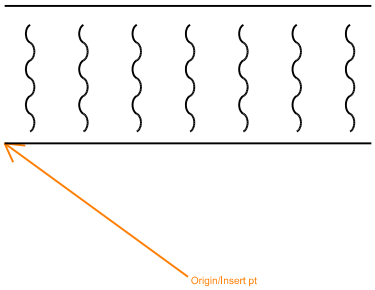
Architectural: SNKSLP
SLOP TYPE SINK
Element type: Symbol



Architectural: SNKSRV
SERVICE SINK
Element type: Symbol

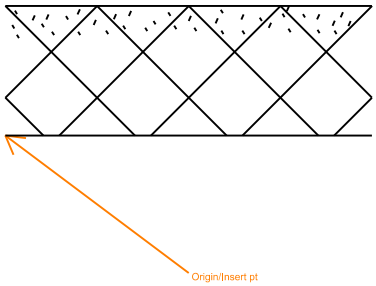


Architectural: SNKSSC
SURGEON SCRUB SINK
Element type: Symbol

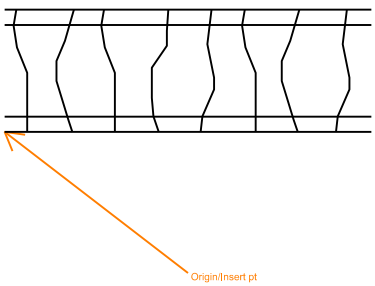


Architectural: STLCSS
STRUCTURAL CLAY TILE SM SCL
Element type: Symbol

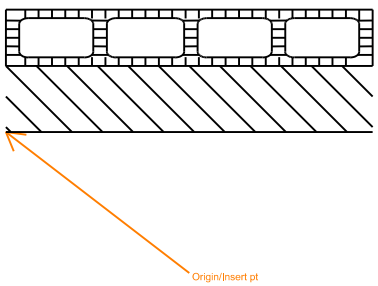
Architectural: SUSPNT
SUSPENSION TEE
Element type: Symbol



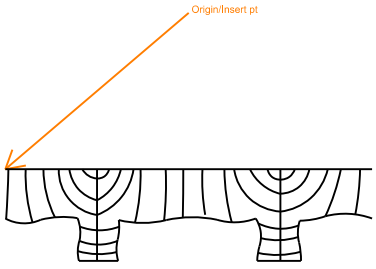
Architectural: TC1FLS
TERACOTA GLZD1FACE LRGSCALE
Element type: Symbol



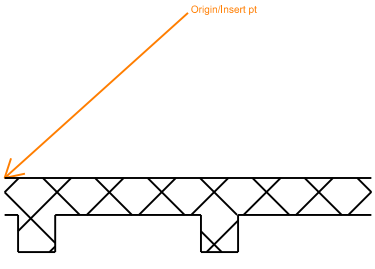
Architectural: TC2FSS
TERACOTA GLZD2FACES SMSCALE
Element type: Symbol



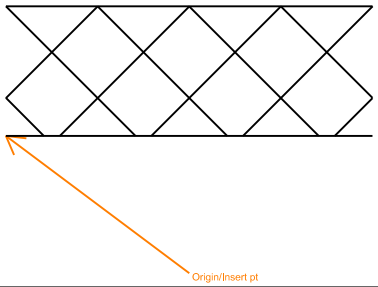
Architectural: TCHOLW
HOLLOW TERRA COTTA
Element type: Symbol



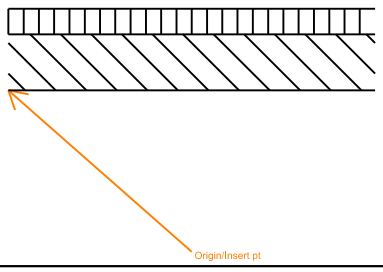
Architectural: TCLS
LARGE SCALE TERRA COTTA
Element type: Symbol



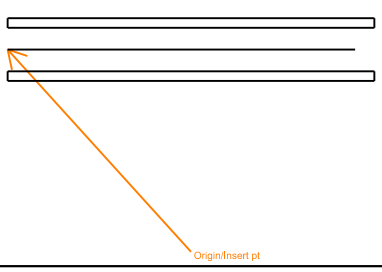
Architectural: TCQLS
TERA COTA QUARRY LRGSCALE
Element type: Symbol



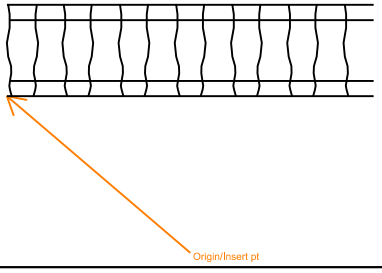
Architectural: TCUGLS
TERACOTA UNGLAZED LRGSCALE
Element type: Symbol



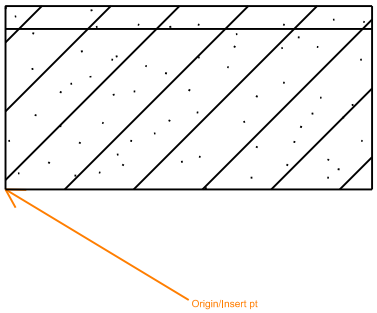
Architectural: TCVENR
VENEER TERRA COTTA
Element type: Symbol



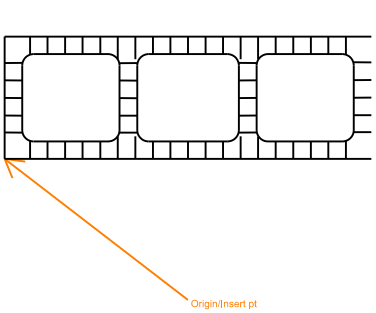
Architectural: THRSHD
THRESHOLD
Element type: Symbol



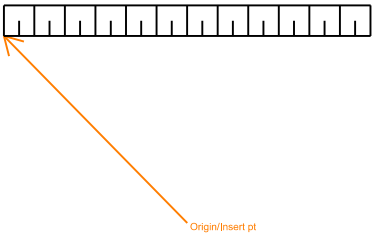
Architectural: TILFSS
SMALL SCALE TILE FACING
Element type: Symbol



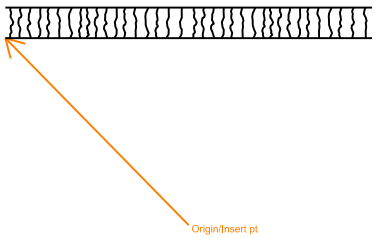
Architectural: TILGSC
GLZESTRUCTURAL CLAYTILE MAS
Element type: Symbol



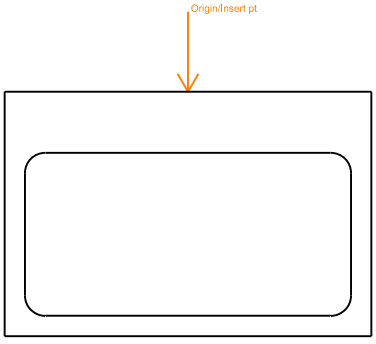
Architectural: TILSFU
TILE STRUCTURAL FLOOR UNITS
Element type: Symbol



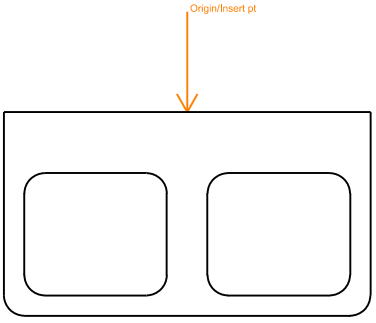
Architectural: TLACOU
ACOUSTICAL TILE FINISH
Element type: Symbol



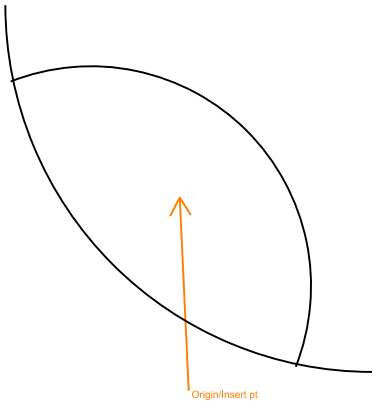
Architectural: TLCRLS
CERAMICTILE FINISH LRGSCALE
Element type: Symbol



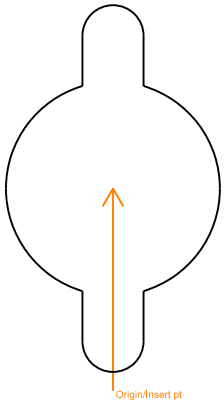
Architectural: TRAY1L
SINGLE LAUNDRY TRAY
Element type: Symbol



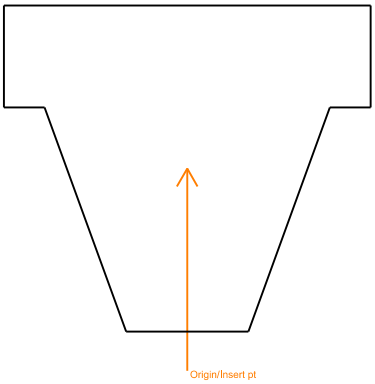
Architectural: TRAY2L
DOUBLE LAUNDRY TRAYS
Element type: Symbol



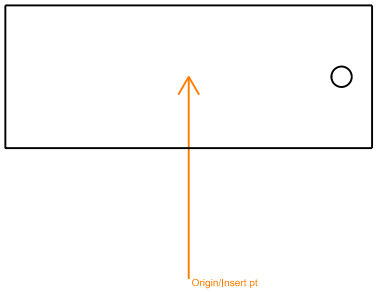
Architectural: URNLCO
CORNER TYPE URINAL
Element type: Symbol



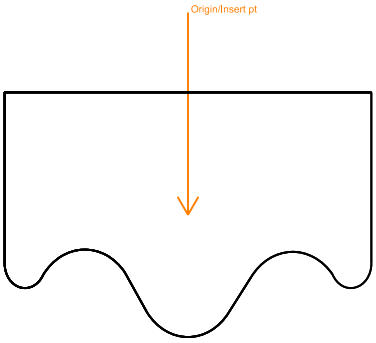
Architectural: URNLPD
PEDESTAL TYPE URINAL
Element type: Symbol



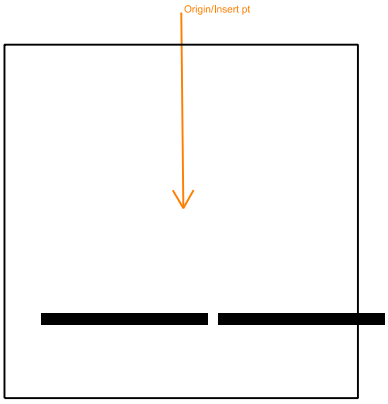
Architectural: URNLST
URINAL STALL
Element type: Symbol



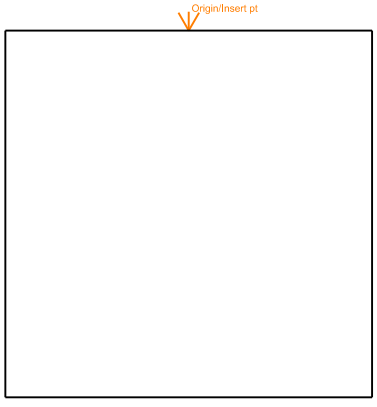
Architectural: URNLTR
TROUGH TYPE URINAL
Element type: Symbol



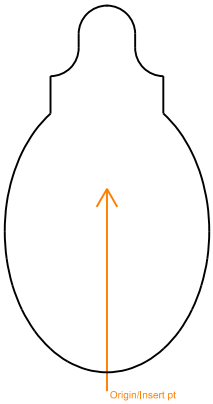
Architectural: URNLWH
WALL HUNG URINAL
Element type: Symbol



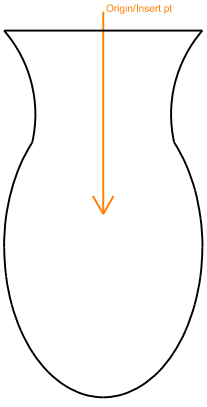
Architectural: WALLID
WALL TYPE IDENTIFIER
Element type: Symbol



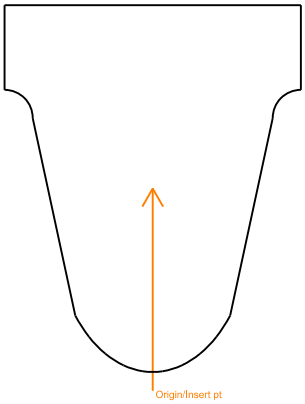
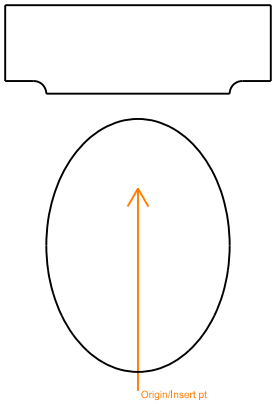
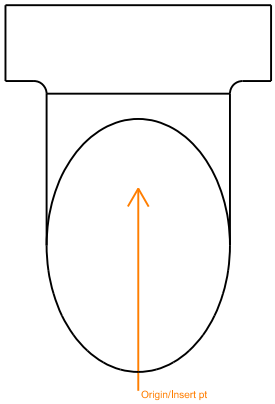
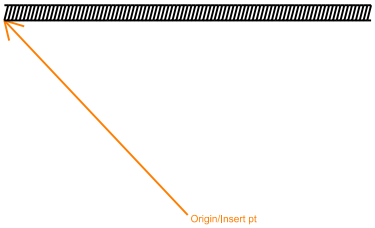
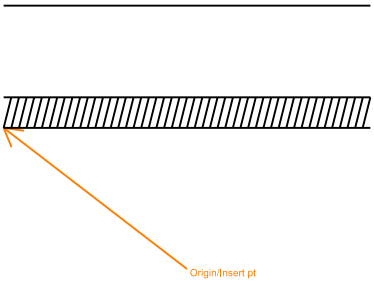
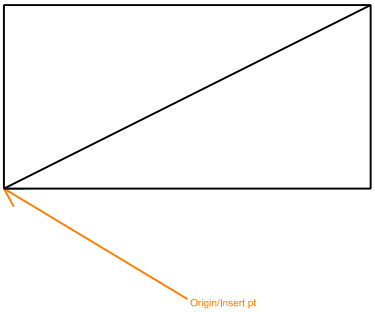
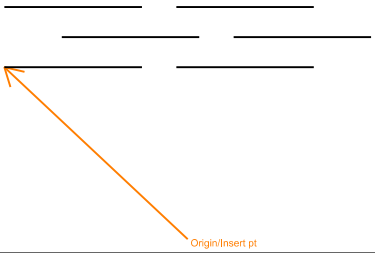
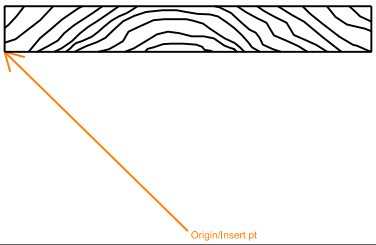
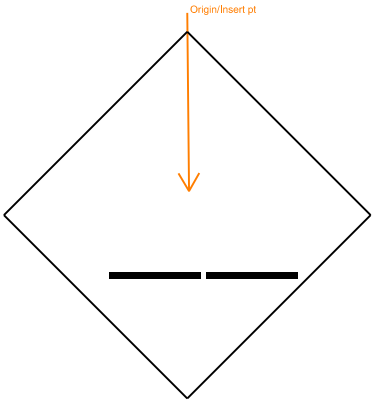
Architectural: WCELWH
ELEC WALLHUNG WATER COOLER
Element type: Symbol

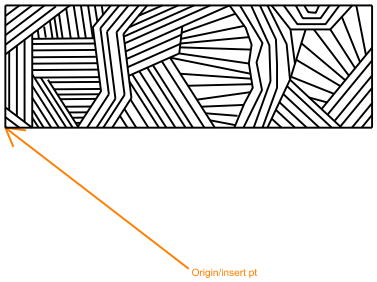
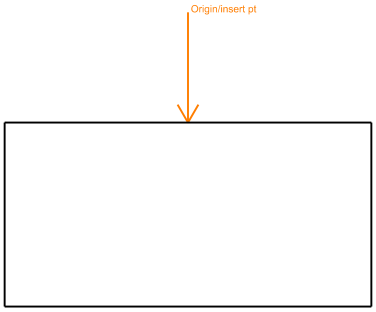
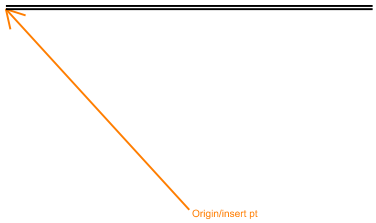


Architectural: WCFVFO
F.V. FLR OUTLET WATERCLOSET
Element type: Symbol

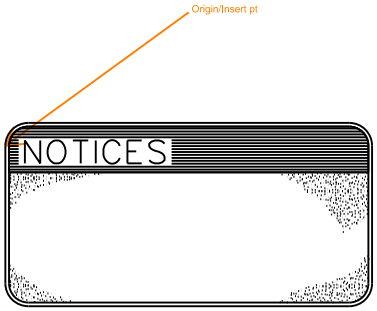


Architectural: WCFVWH
F.V. WALL HUNG WATERCLOSET
Element type: Symbol

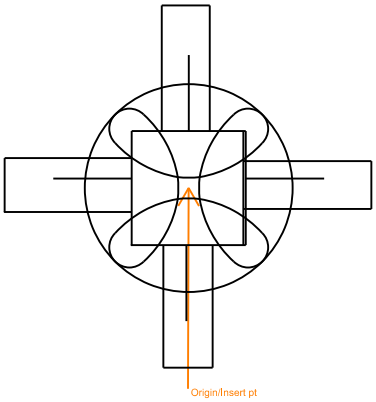
		
Architectural: WCITNK INTEGRAL TANK WATERCLOSET Element type: Symbol	Architectural: WCTANK TANK TYPE WATERCLOSET Element type: Symbol	Architectural: WCWHTN WALL HUNG TANK WATERCLOSET Element type: Symbol
		
Architectural: WDFLBD WOOD FLOOR BOARD Element type: Symbol	Architectural: WDFNOS WOOD FINISH ON STUDS Element type: Symbol	Architectural: WDFRAM CONTINUOUS WOOD FRAMING Element type: Symbol
		
Architectural: WDSHSD WOOD SHINGLES SIDING Element type: Symbol	Architectural: WFINSH WOOD FINISH Element type: Symbol	Architectural: WINID WINDOW IDENTIFIER Element type: Symbol

		
Architectural: WOODHB HARDBOARD WOOD Element type: Symbol	Architectural: WSHRBP BEDPAN WASHER Element type: Symbol	Architectural: WTRPFF WATERPROOFING FELT FLASHING Element type: Symbol

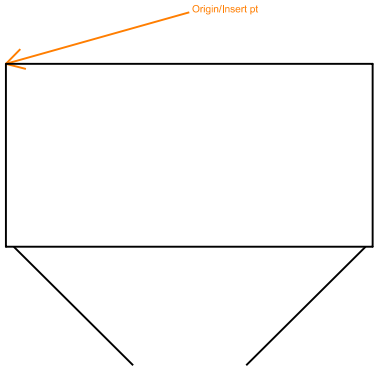
9 Interiors Objects Library



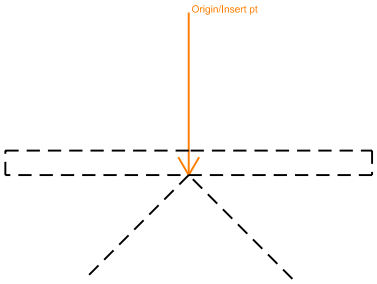
Interiors: ABLLBD
BULLETIN BOARD
Element type: Object



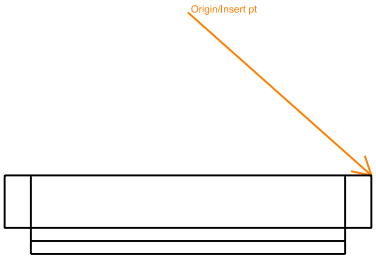
Interiors: ACOSTM
COSTUMER
Element type: Object



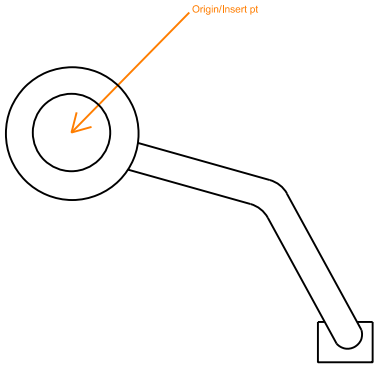
Interiors: ADDCAB
DOUBLE DOOR CABINET
Element type: Object



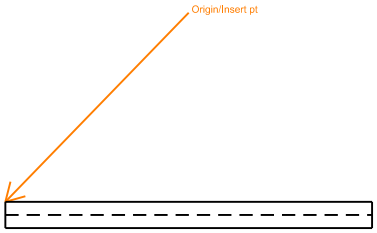
Interiors: AEAS30
EASEL 30W HIDDEN
Element type: Object



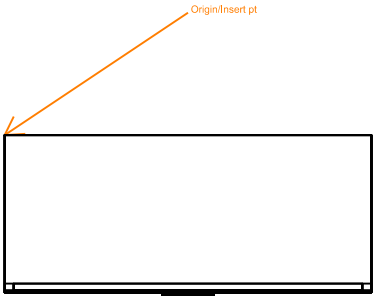
Interiors: AMAG15
MAGAZINE RACK 15W X 3D
Element type: Object



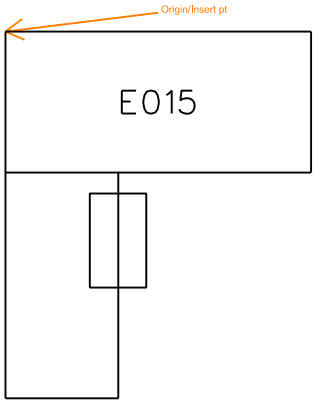
Interiors: AMAGLT
MAGNIFYING LIGHT
Element type: Object



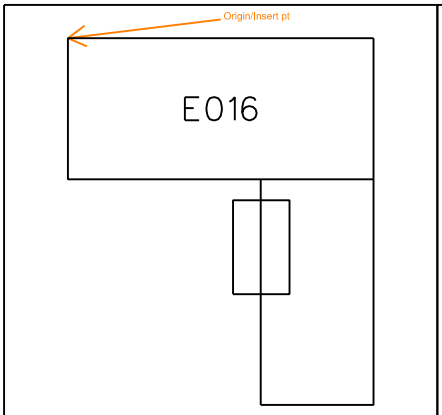
Interiors: APRJSC
PROJECTION SCRN CEILNG MNTD
Element type: Object



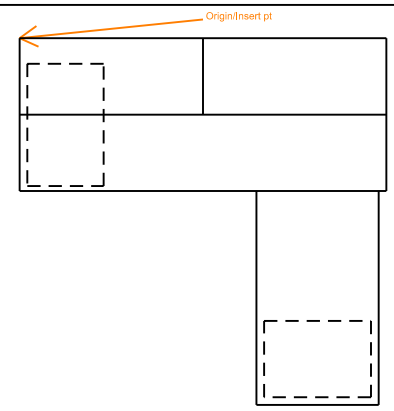
Interiors: ASTCAB
STORAGE CABINET
Element type: Object



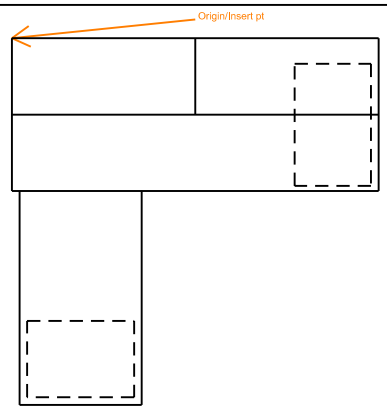
Interiors: D65CLR
DESK 65 COMP LR
Element type: Object



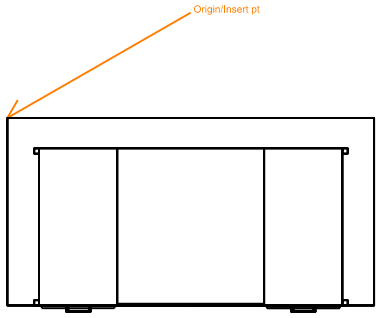
Interiors: D65CRR
DESK 65 COMP RR
Element type: Object



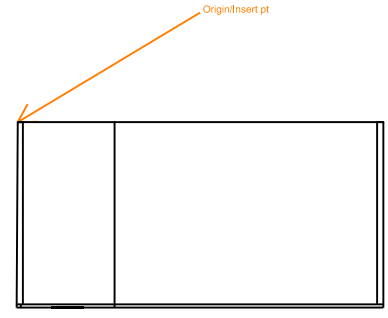
Interiors: D7230L
LH SNGL PED DESK 72W X 30D2
Element type: Object



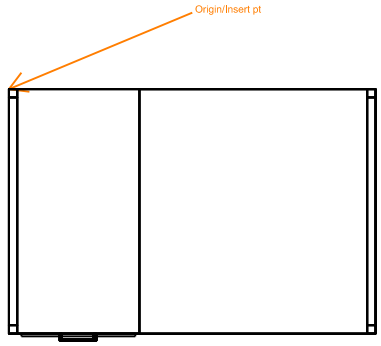
Interiors: D7230R
RH SNGL PED DESK 72W X 30D2
Element type: Object



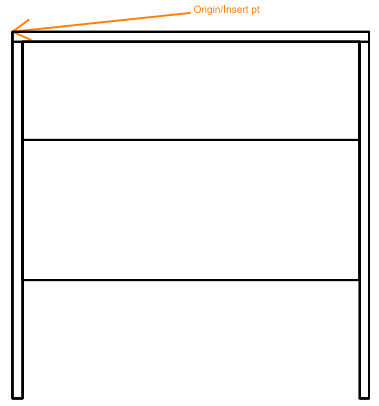
Interiors: DPFF
DESK DOUBLE FILE PEDESTAL
Element type: Object



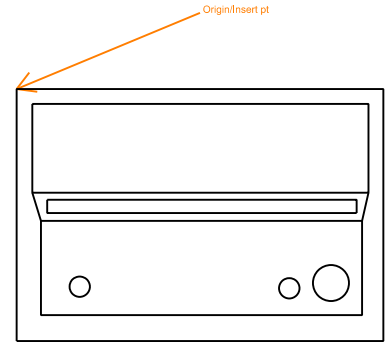
Interiors: DPFL
DESK LEFT PEDESTAL
Element type: Object



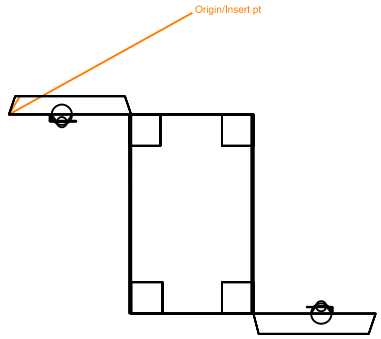
Interiors: DPFR
DESK RETURN PEDESTAL FILE
Element type: Object



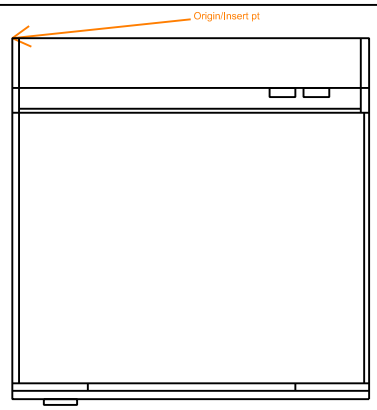
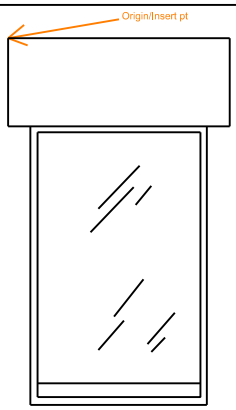
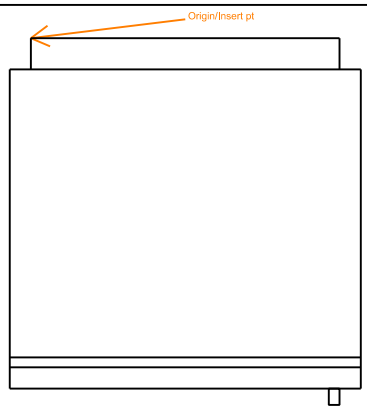
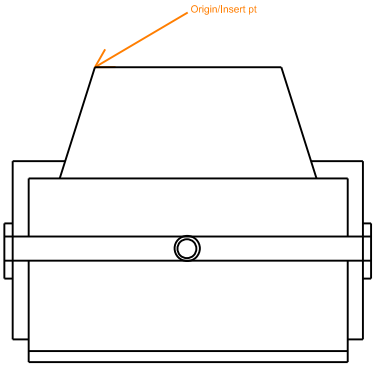
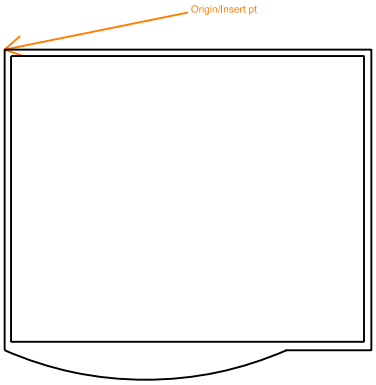
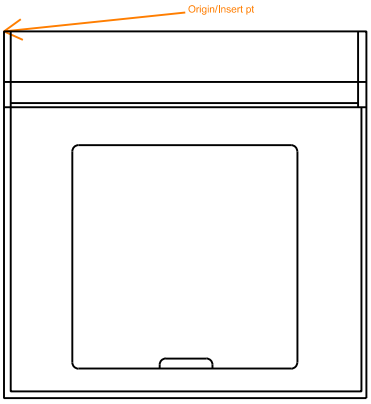
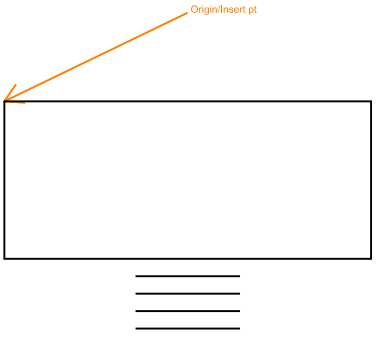
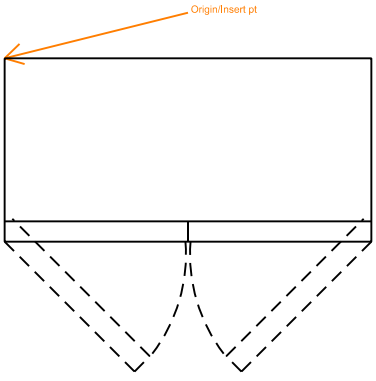
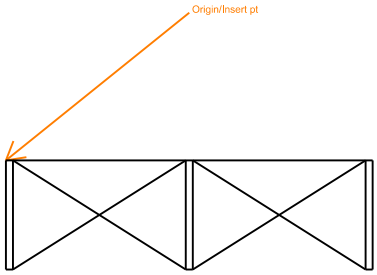
Interiors: DSC1
DESK STUDY CARREL SINGLE
Element type: Object

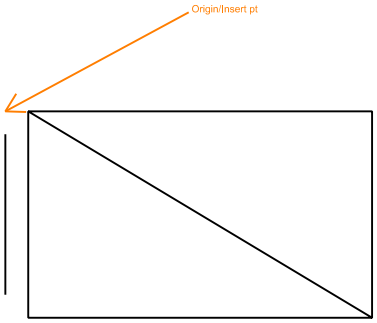


Interiors: ECGAME
FREESTANDING COMPUTER GAME
Element type: Object

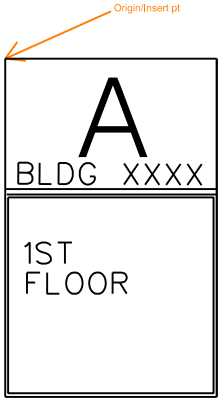


Interiors: ECOMCN
COMSEC CONTAINER
Element type: Object

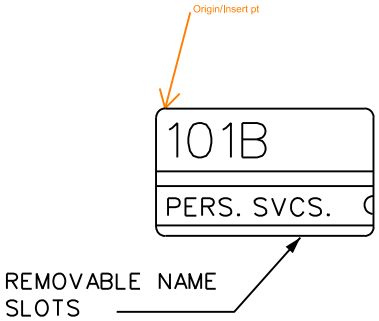
		
Interiors: EDRYER DRYER Element type: Object	Interiors: EPINBL PINBALL MACHINE Element type: Object	Interiors: EREFRG REFRIGERATOR Element type: Object
		
Interiors: ETV TELEVISION Element type: Object	Interiors: EVEND VENDING MACHINE Element type: Object	Interiors: EWASHM WASHING MACHINE Element type: Object
		
Interiors: F4DL LATERAL FILE CABINET 4 DRAW Element type: Object	Interiors: FC3618 STORAGE CABINET 36W X 18D Element type: Object	Interiors: FE7422 EQUIP SHELVNG 74WX22D BRRKS Element type: Object



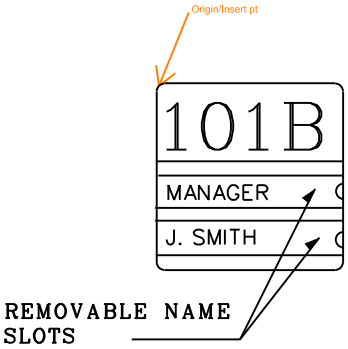
Interiors: FV1833
VERTICAL FILE 18W X 33D
Element type: Object



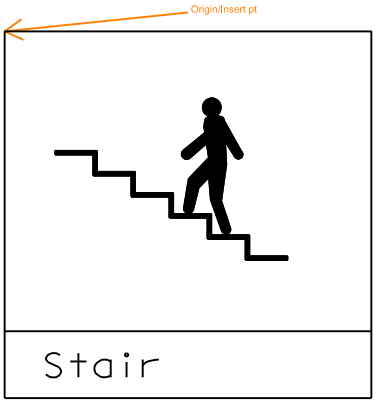
Interiors: GIDIR
DIRECTORY
Element type: Object



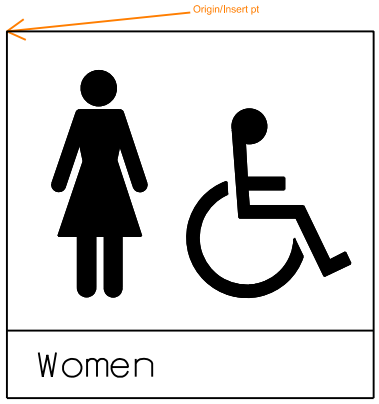
Interiors: GIIS1
IDENT SIGN WITH 1 SLOT
Element type: Object



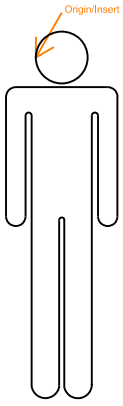
Interiors: GIIS2
IDENT SIGN WITH 2 SLOTS
Element type: Object



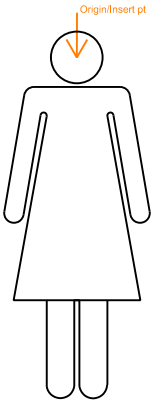
Interiors: GIPIC1
PICTOGRAM1
Element type: Object



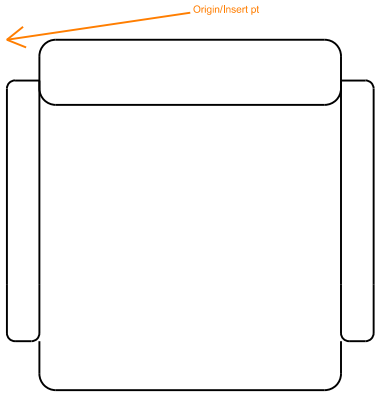
Interiors: GIPIC2
PICTOGRAM 2
Element type: Object



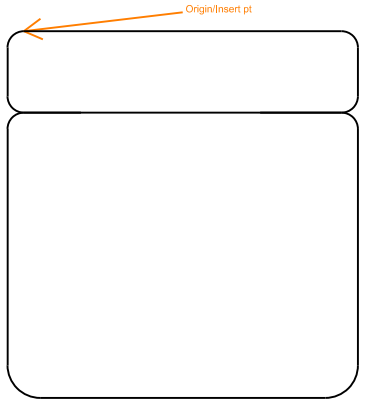
Interiors: GMAN
MAN SYM FR RESTROOM SIGNAGE
Element type: Object



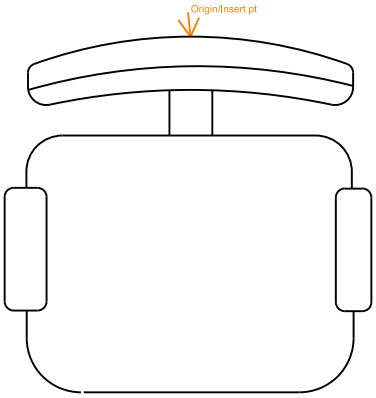
Interiors: GWOMAN
WOMAN SYMFOR RESTRM SGNAGE
Element type: Object



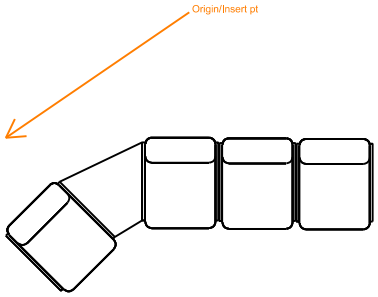
Interiors: SDMGT
MGMNT CHAIR W ARMS 24WX22D
Element type: Object



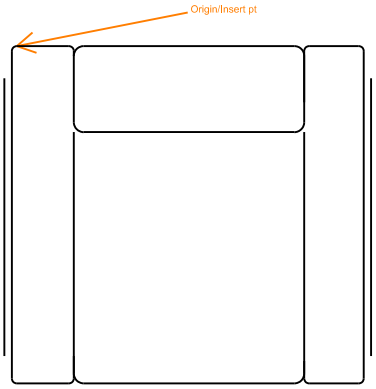
Interiors: SDSEC
SECRTRL CHR NO ARMS 23WX22D
Element type: Object



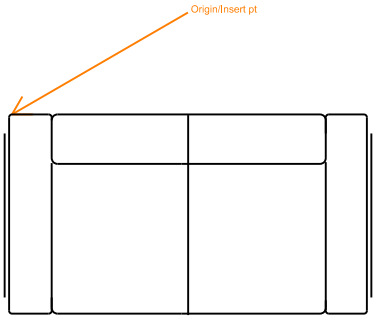
Interiors: SDTASK
TASK CHAIR
Element type: Object



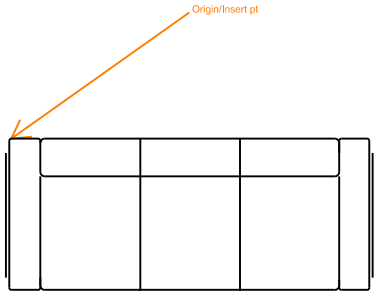
Interiors: SGANG
GANG SEATING W TABLE
Element type: Object



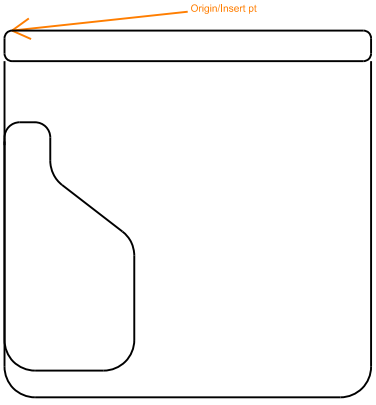
Interiors: SSOF37
SOFA CHAIR 37W X 34D
Element type: Object



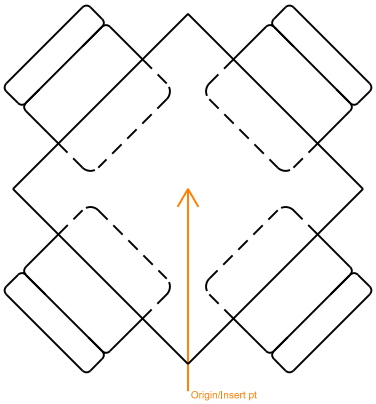
Interiors: SSOF63
2 CUSHION SOFA 63W X 34D
Element type: Object



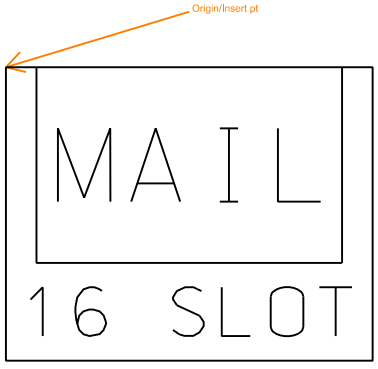
Interiors: SSOF82
3 CUSHION SOFA 82.5W X 34D
Element type: Object



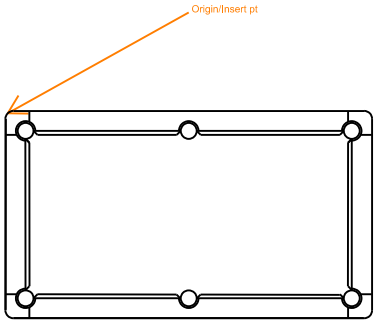
Interiors: STAB24
CHAIR TABLET ARM 24W X 24D
Element type: Object



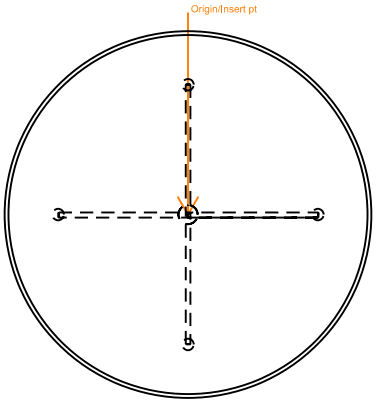
Interiors: T42SQ
TABLE 42SQ W ARMLESS CHR
Element type: Object



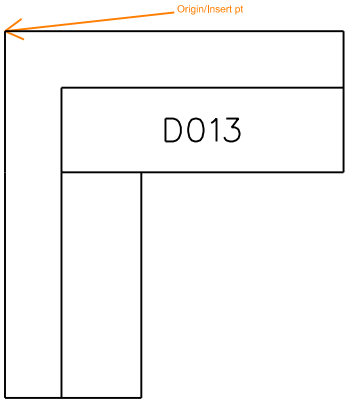
Interiors: TMS30
MAILSORT TBLE 16OH SLOTS30W
Element type: Object



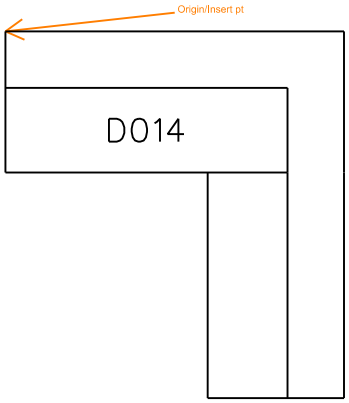
Interiors: TPOOL
POOL TABLE
Element type: Object



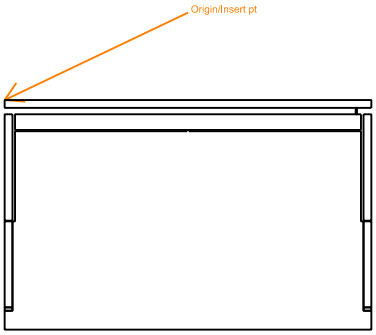
Interiors: TROUND
ROUND TABLE
Element type: Object



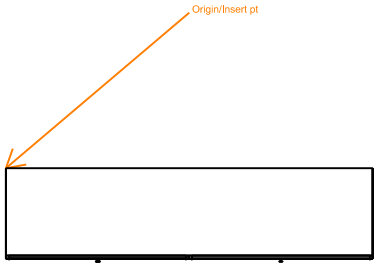
Interiors: W7230L
WORKSTATION L UNIT LR
Element type: Object



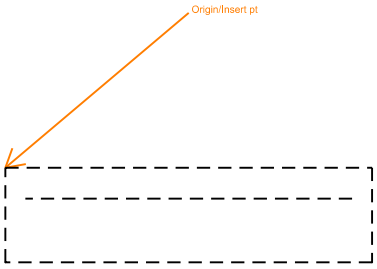
Interiors: W7230R
WORKSTATION L UNIT RR
Element type: Object



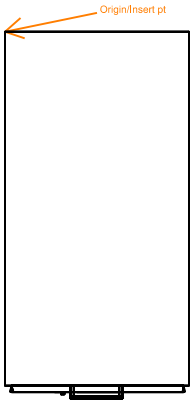
Interiors: WCPDSK
DESK COMPUTER
Element type: Object



Interiors: WFLIPR
FLIPPER DOOR UNIT
Element type: Object

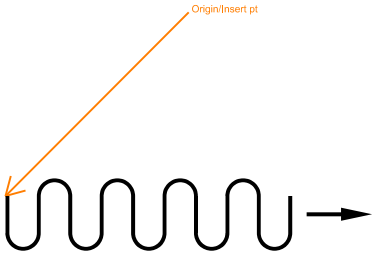


Interiors: WLIGHT
WORKSTATION LIGHT
Element type: Object

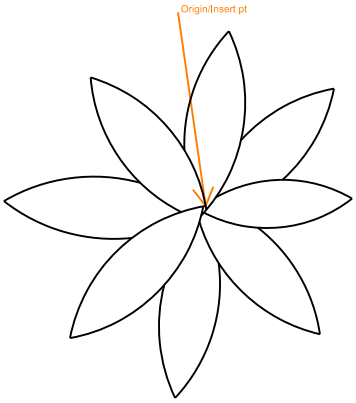


Interiors: WPED
WORKSTATION PEDESTAL
Element type: Object

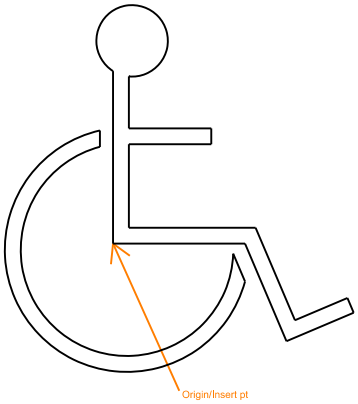
9 Interiors Symbols Library



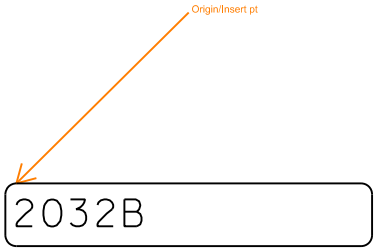
Interiors: ACURTN
CURTAIN
Element type: Symbol



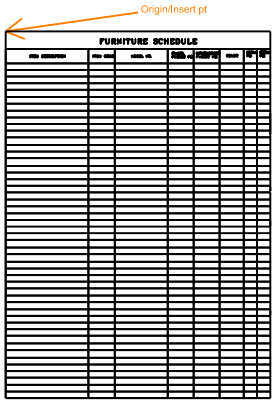
Interiors: APLANT
ARTIFICIAL PLANT
Element type: Symbol



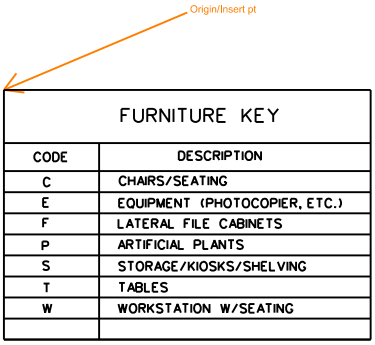
Interiors: GHNDCP
UNIVERSAL HANDICAP SYMBOL
Element type: Symbol



Interiors: GIID
IDENTIFICATION SIGN
Element type: Symbol

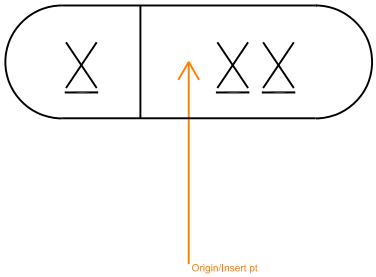


Interiors: MFMATL
FURNITURE MATERIAL LIST
Element type: Symbol

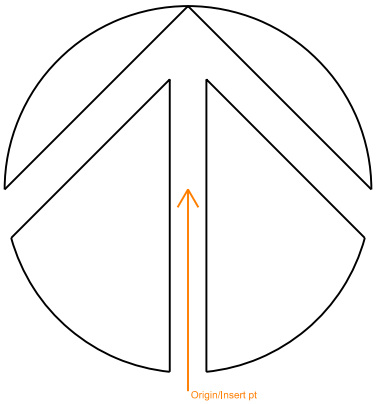


CODE	DESCRIPTION
C	CHAIRS/SEATING
E	EQUIPMENT (PHOTOCOPIER, ETC.)
F	LATERAL FILE CABINETS
P	ARTIFICIAL PLANTS
S	STORAGE/KIOSKS/SHELVING
T	TABLES
W	WORKSTATION W/SEATING

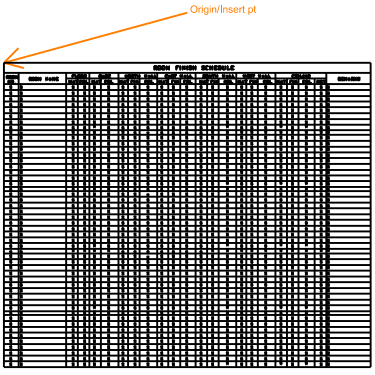
Interiors: MFSCHD
FURNITURE SCHEDULE
Element type: Symbol



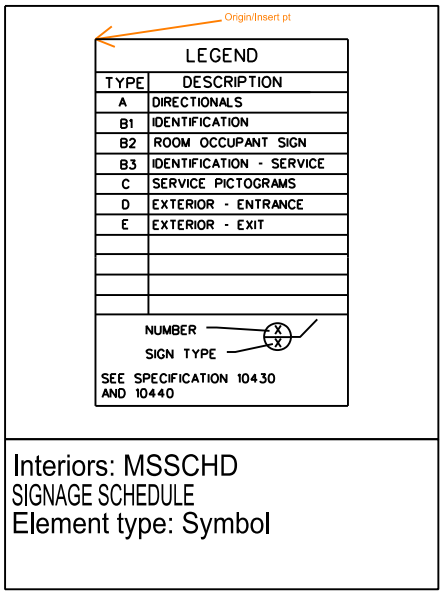
Interiors: MFSYMB
FURNITURE SYMBOL
Element type: Symbol



Interiors: MNORTH
NORTH ARROW
Element type: Symbol

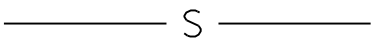


Interiors: MRSCHD
ROOM FINISH SCHEDULE
Element type: Symbol

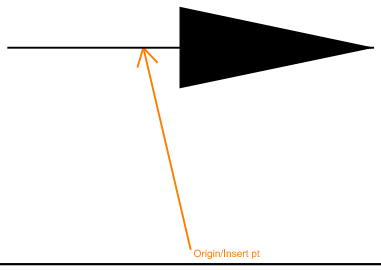


Interiors: MSSCHD
SIGNAGE SCHEDULE
Element type: Symbol

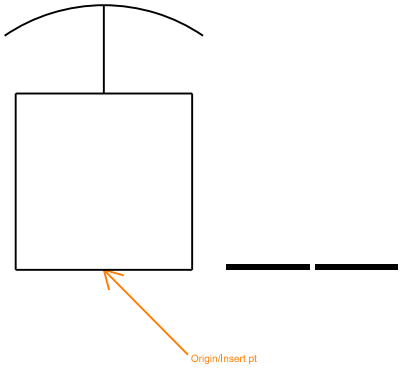
10 Fire Protection Lines Library

		
Fire Protection: FIRE FIRE PROTECTION WATR SUPPLY Element type: Line	Fire Protection: MANSUC SUCTION MAIN Element type: Line	Fire Protection: SPRINK MAIN SUPPLY SPRINKLER Element type: Line
Fire Protection: STDCOM COMBINATION STANDPIPE Element type: Line	Fire Protection: STDDRY DRY STANDPIPE Element type: Line	Fire Protection: STDWET WET STANDPIPE Element type: Line

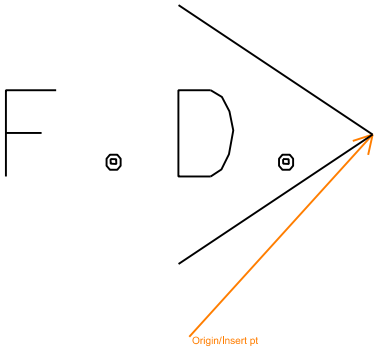
10 Fire Protection Symbols Library



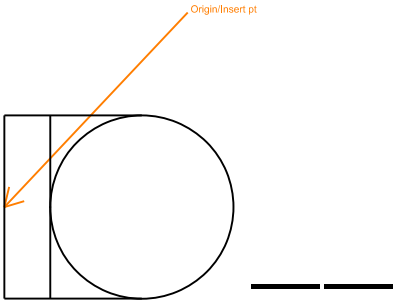
Fire Protection: 1DIR
DIRECTION ARROW
Element type: Symbol



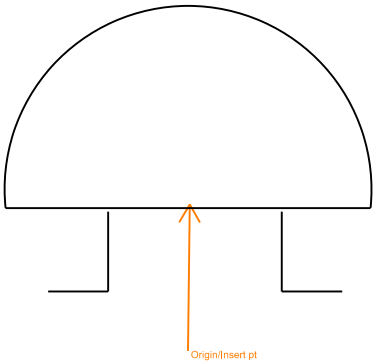
Fire Protection: ABORT
ABORT SWITCH
Element type: Symbol



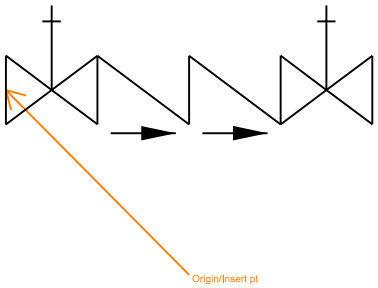
Fire Protection: ACCESS
FIRE DEPARTMENT ACCESS
Element type: Symbol



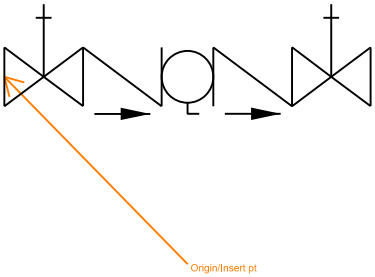
Fire Protection: AGSTCN
AGENT STORAGE CONTAINER
Element type: Symbol



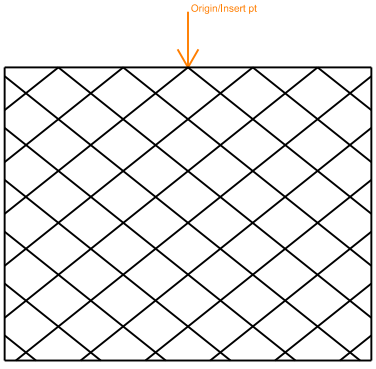
Fire Protection: BELLFA
FIRE ALARM BELL
Element type: Symbol



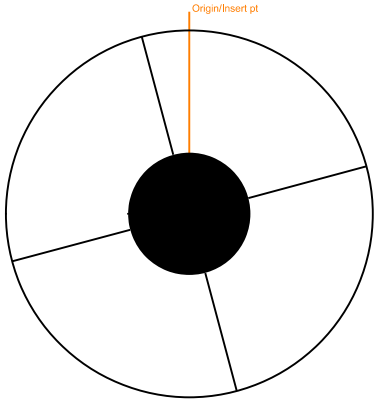
Fire Protection: BFPDCK
BACKFLOW PREVENTER DBL CHK
Element type: Symbol



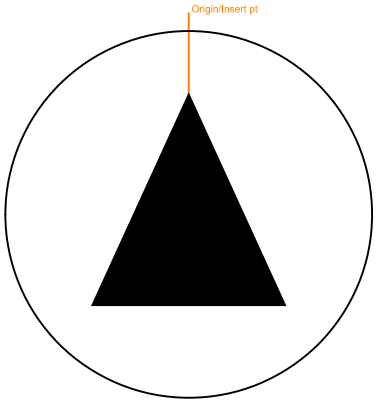
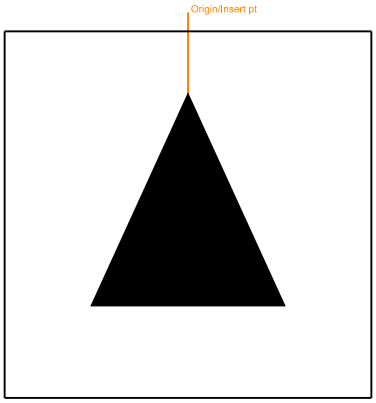
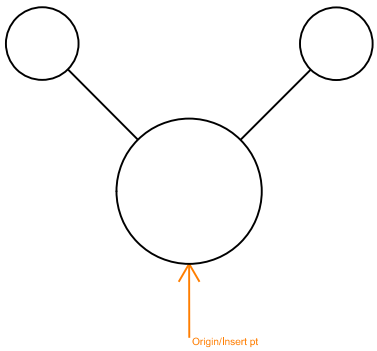
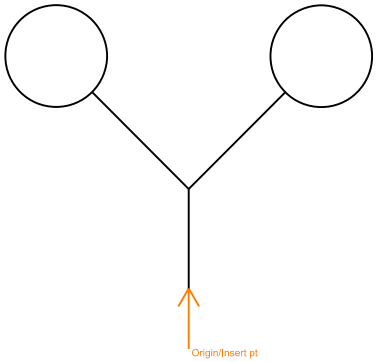
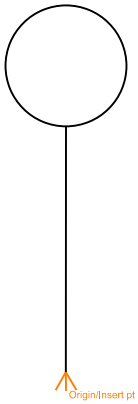
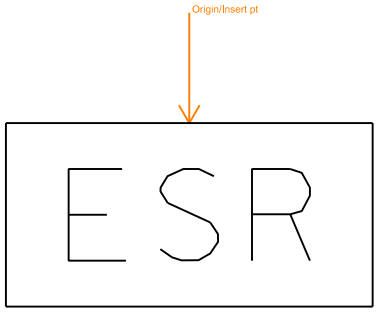
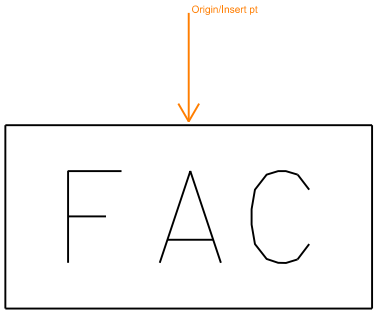
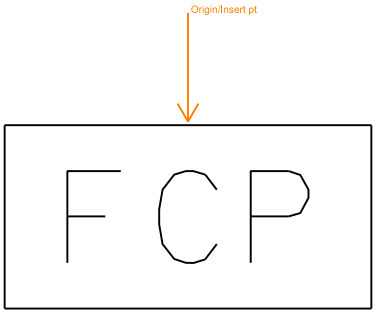
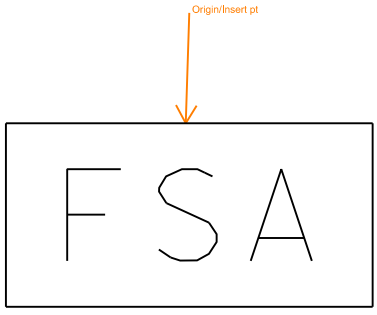
Fire Protection: BFPRPZ
BACKFLOW PREVENTER RPZ
Element type: Symbol

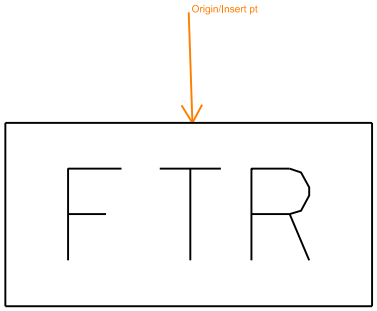


Fire Protection: BOILER
BOILER
Element type: Symbol

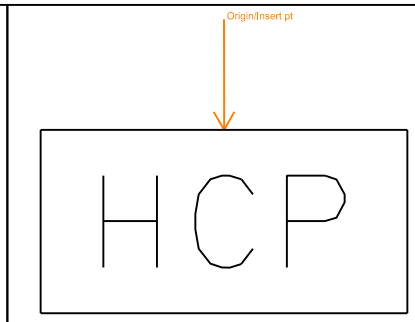


Fire Protection: CHIMNY
CHIMNEY
Element type: Symbol

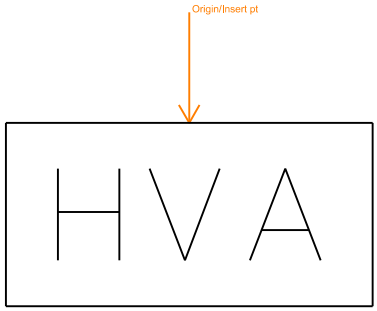
		
Fire Protection: CO2AA C02 AUTO ACTUATED EXNGSHR Element type: Symbol	Fire Protection: CO2MA C02 MAN ACTUATED EXTNGSHR Element type: Symbol	Fire Protection: CONSFS FREESTNDNG SIAMESE F.D. CON Element type: Symbol
		
Fire Protection: CONSIA SIAMESE FIRE DPT CONNECTION Element type: Symbol	Fire Protection: CONSNG SINGLE FIRE DPT. CONNECTION Element type: Symbol	Fire Protection: CPESR ELEVATOR STATUS RECALL Element type: Symbol
		
Fire Protection: CPFAC FIRE AL COMMUNICATOR Element type: Symbol	Fire Protection: CPFCP F A CONTROL PANEL Element type: Symbol	Fire Protection: CPFSA F A FIRE SYS ANNUNCIATOR Element type: Symbol



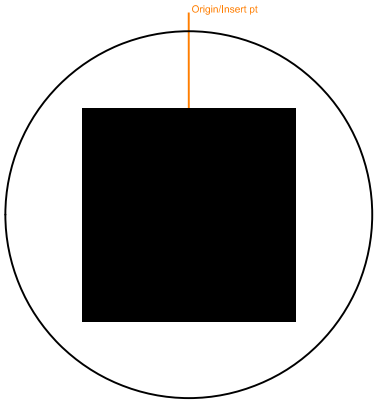
Fire Protection: CPFTR
F A TRANSMITTER
Element type: Symbol



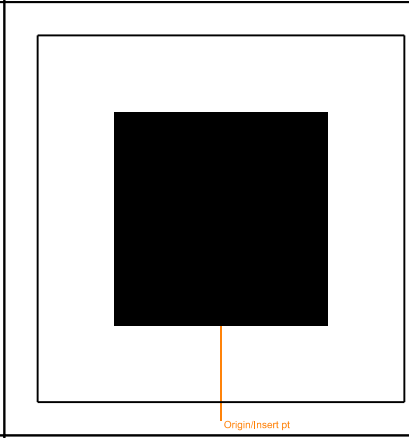
Fire Protection: CPHCP
HALON CONTROL PANEL
Element type: Symbol



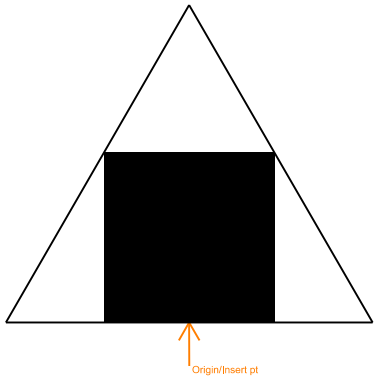
Fire Protection: CPHVA
CONTROL PANEL HVAC
Element type: Symbol



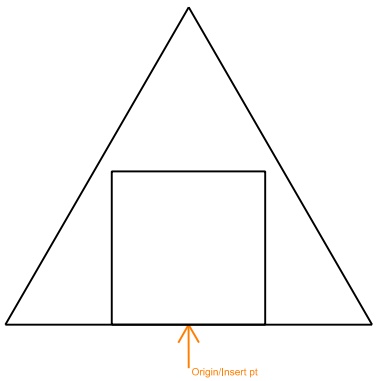
Fire Protection: DCATAA
ALLTYPE FIREEXTNGSHRAUTOACT
Element type: Symbol



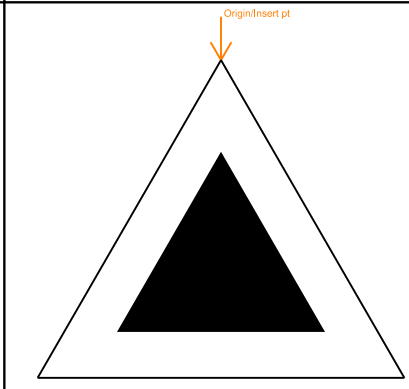
Fire Protection: DCATMA
ALLTYPE FIREEXTNGSHR MANACT
Element type: Symbol



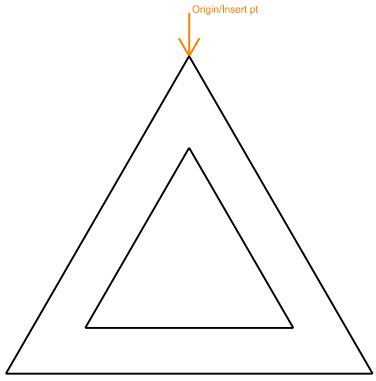
Fire Protection: DCEABC
DRY CHEM EXTNGSHR ABC TYPE
Element type: Symbol



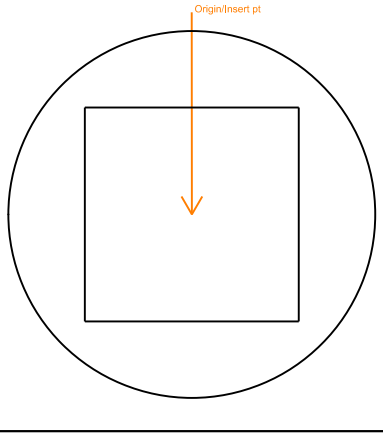
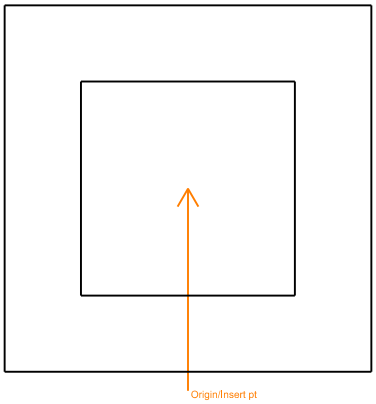
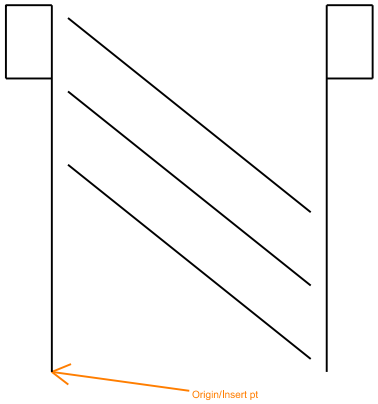
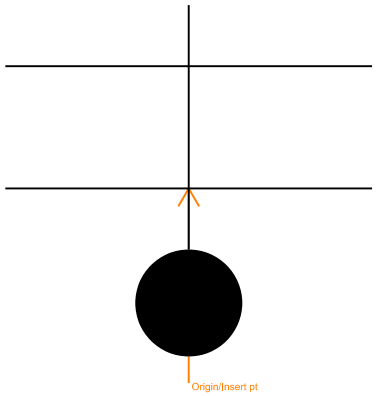
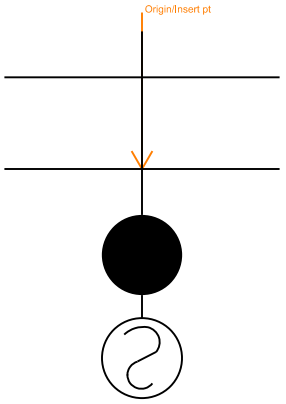
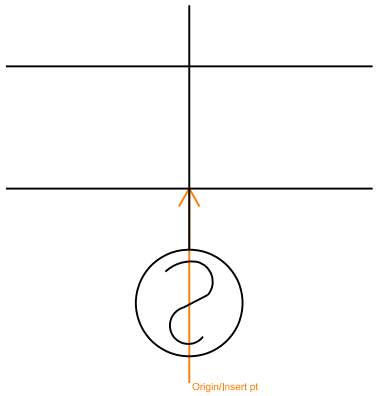
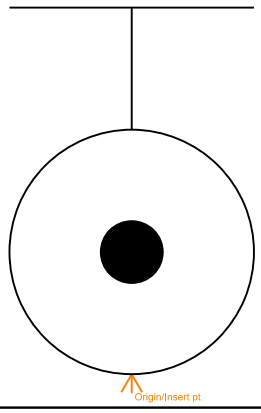
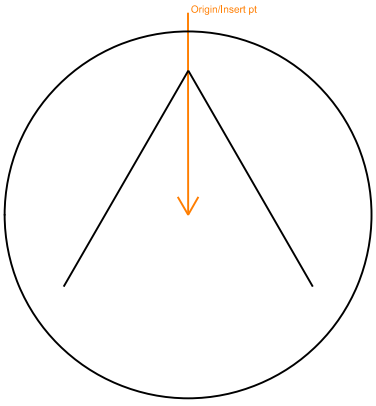
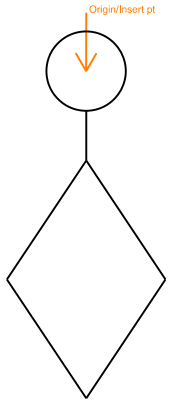
Fire Protection: DCEBC
DRY CHEM EXTNGUISHR BC TYPE
Element type: Symbol

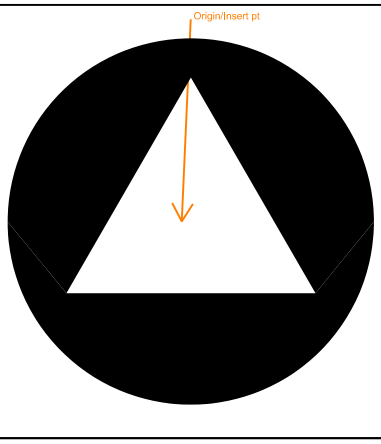


Fire Protection: DCECO2
C02 EXTINGUISHER
Element type: Symbol

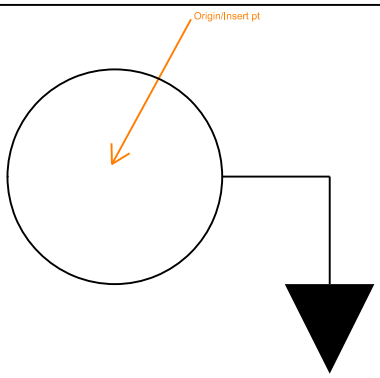


Fire Protection: DCEHLN
HALON OR CLEANAGENTEXTNGSHR
Element type: Symbol

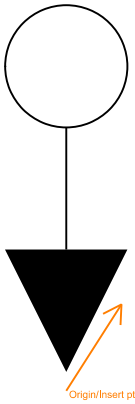
		
Fire Protection: DCLGAA DRY CHEM AUTO ACT EXTNGSHR Element type: Symbol	Fire Protection: DCLGMA DRY CHEM MAN ACTUATED Element type: Symbol	Fire Protection: DMPBAR BAROMETRIC DAMPER Element type: Symbol
		
Fire Protection: DMPFIR FIRE DAMPER Element type: Symbol	Fire Protection: DMPFS FIRE SMOKE DAMPER Element type: Symbol	Fire Protection: DMPSMK SMOKE DAMPER Element type: Symbol
		
Fire Protection: DRHOLD DOOR HOLDER Element type: Symbol	Fire Protection: DTFLAM FLAME DETECTOR Element type: Symbol	Fire Protection: DTFLOW FA FLOW DETECTOR Element type: Symbol



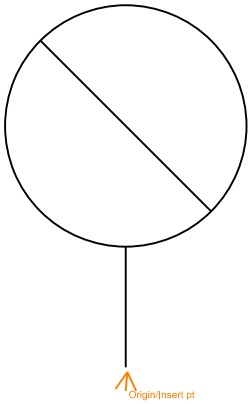
Fire Protection: DTGAS
FA GAS DETECTOR
Element type: Symbol



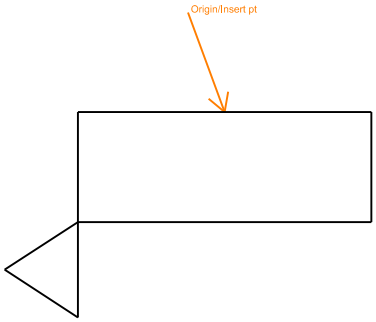
Fire Protection: DTLEVL
FA LEVEL DETECTOR
Element type: Symbol



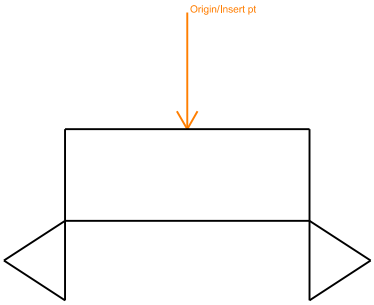
Fire Protection: DTPRES
FA PRESSURE DETECTOR
Element type: Symbol



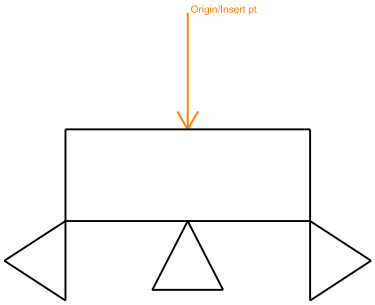
Fire Protection: DTTAMP
FA TAMPER DETECTOR
Element type: Symbol



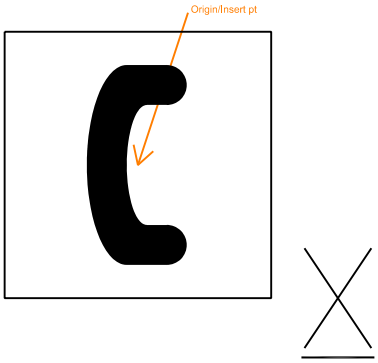
Fire Protection: ELBP1L
1LAMP EMRGNCY LGHTBTTRYPWR
Element type: Symbol



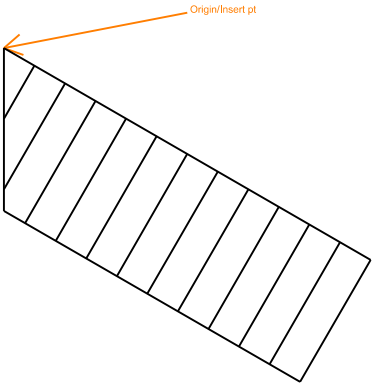
Fire Protection: ELBP2L
2LAMP EMRGNCY LGHTBTTRYPWR
Element type: Symbol



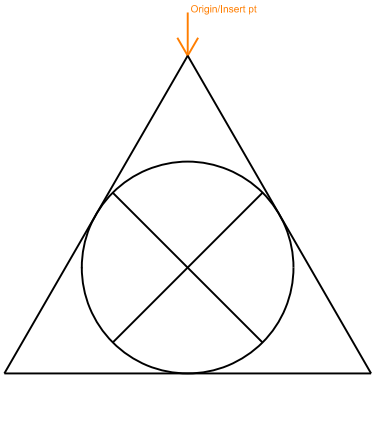
Fire Protection: ELBP3L
3LAMP EMRGNCY LGHTBTTRYPWR
Element type: Symbol



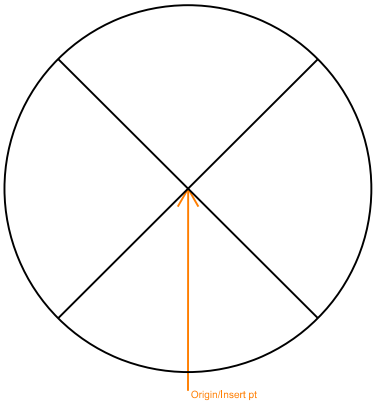
Fire Protection: EPSTA
EMERGENCY PHONE STATION
Element type: Symbol



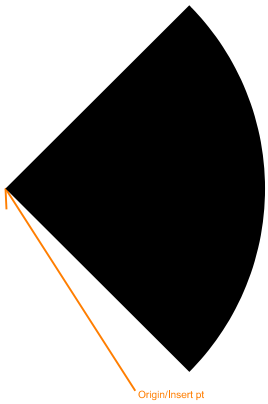
Fire Protection: ESCAPE
FIRE ESCAPE
Element type: Symbol



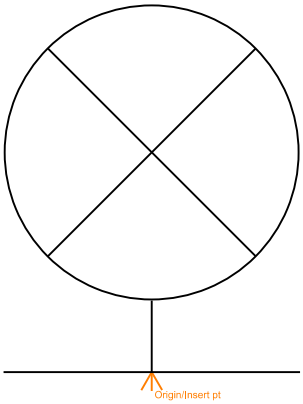
Fire Protection: EXFOAM
FOAM EXTINGUISHER
Element type: Symbol



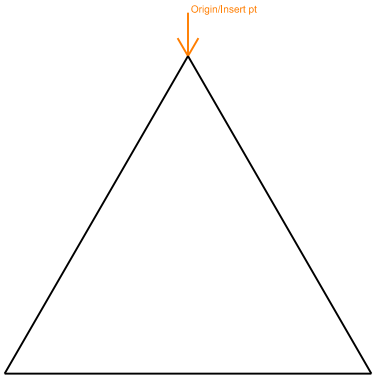
Fire Protection: EXITCM
CEILING MNTD EXITSIGN LIGHT
Element type: Symbol



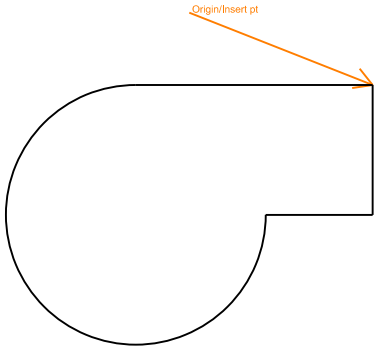
Fire Protection: EXITLF
EXIT SIGN LIGHTED FACE
Element type: Symbol



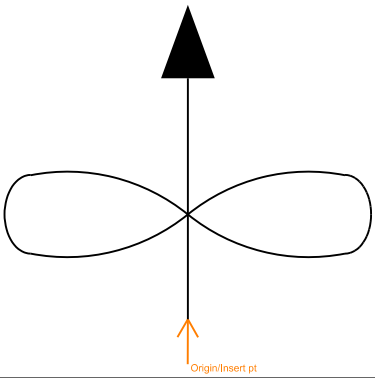
Fire Protection: EXITWM
WALL MOUNTD EXIT SIGN LIGHT
Element type: Symbol



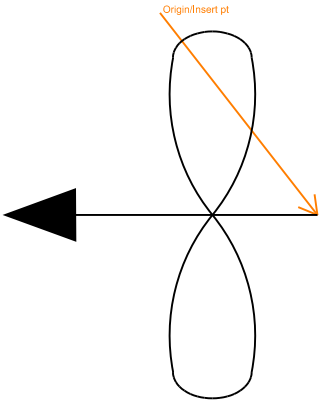
Fire Protection: EXWATR
WATER EXTINGUISHER
Element type: Symbol



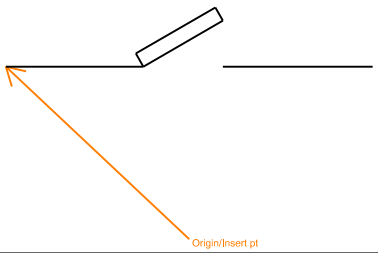
Fire Protection: FANDCT
DUCT FAN
Element type: Symbol



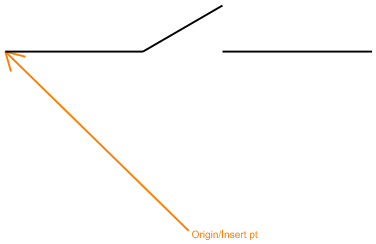
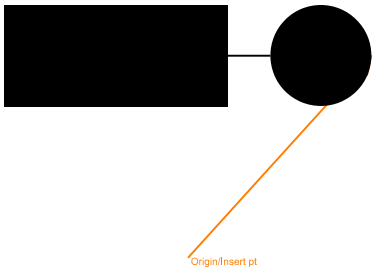
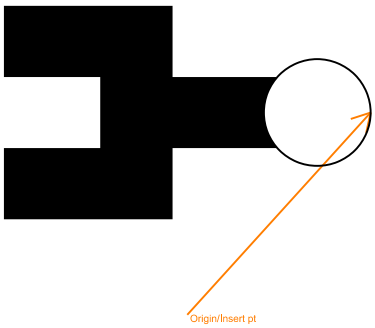
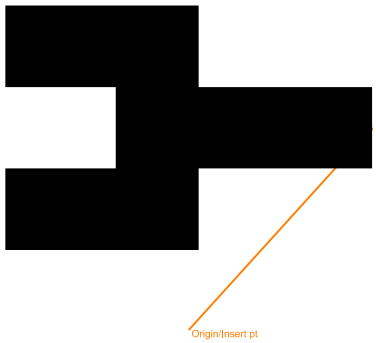
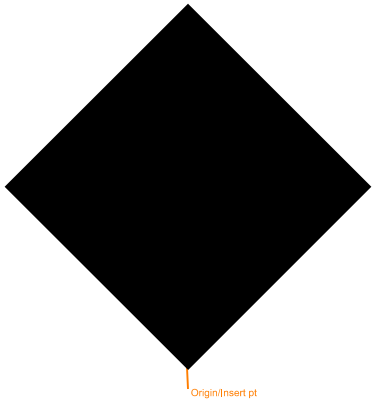
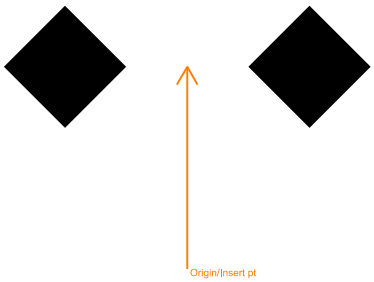
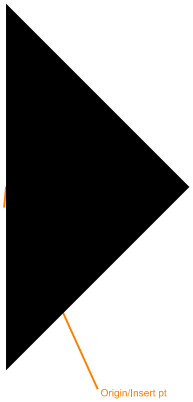
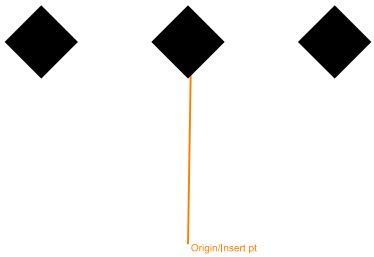
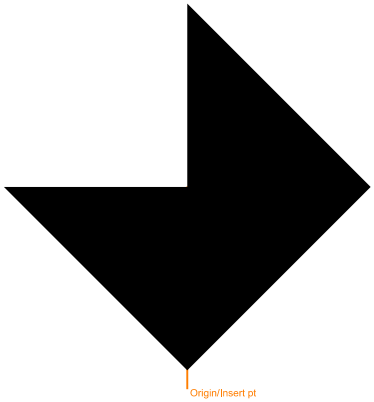
Fire Protection: FANGEN
GENERAL FAN
Element type: Symbol

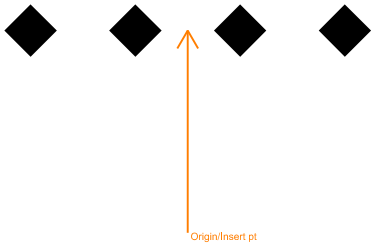


Fire Protection: FANWAL
WALL FAN
Element type: Symbol

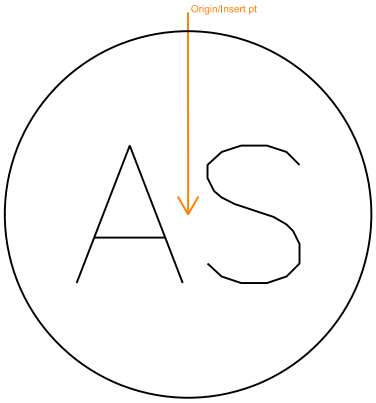


Fire Protection: FDOR3
3HR RATED FIRE DOOR IN WALL
Element type: Symbol

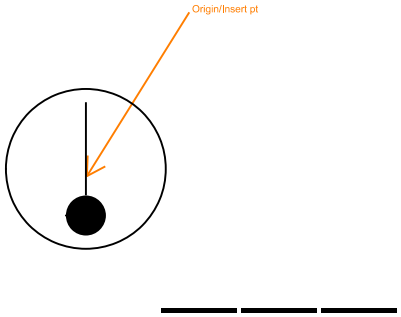
		
Fire Protection: FDORL3 WALL W 3 HOUR RATED DOOR Element type: Symbol	Fire Protection: FPDRIV FIRE PUMP WITH DRIVES Element type: Symbol	Fire Protection: FPFREE FREE STANDING TEST HEADER Element type: Symbol
		
Fire Protection: FPTEST WALL MOUNTED TEST HEADER Element type: Symbol	Fire Protection: FRR1HR 1 HR FIRE RATING Element type: Symbol	Fire Protection: FRR2HR 2 HR FIRE RATING Element type: Symbol
		
Fire Protection: FRR30M 30 MIN FIRE RATING Element type: Symbol	Fire Protection: FRR3HR 3 HR FIRE RATING Element type: Symbol	Fire Protection: FRR45M 45 MIN FIRE RATING Element type: Symbol



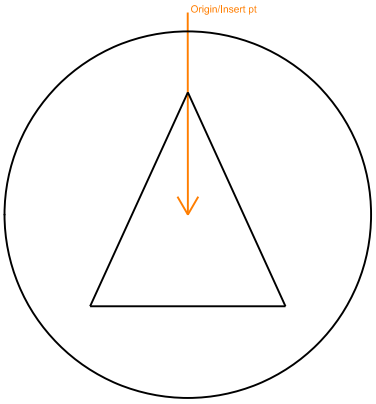
Fire Protection: FRR4HR
4 HR FIRE RATING
Element type: Symbol



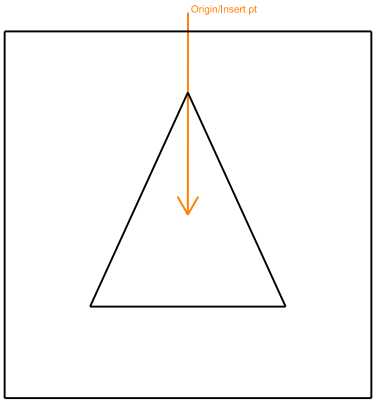
Fire Protection: FULLSS
FULLY SPRINKLERED SPACE
Element type: Symbol



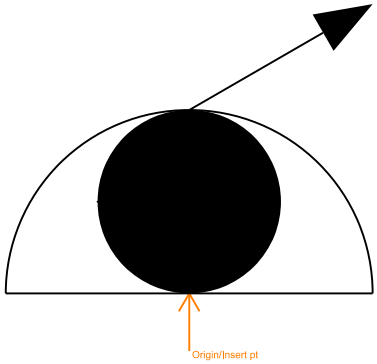
Fire Protection: HD
HEAT DETECTOR
Element type: Symbol



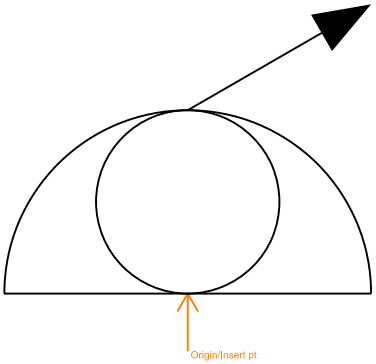
Fire Protection: HLNAA
AUTO ACT HALON EXTINGUISHER
Element type: Symbol



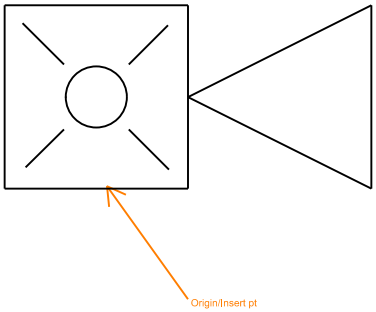
Fire Protection: HLNMA
MAN ACT HALON EXTNGSHR
Element type: Symbol



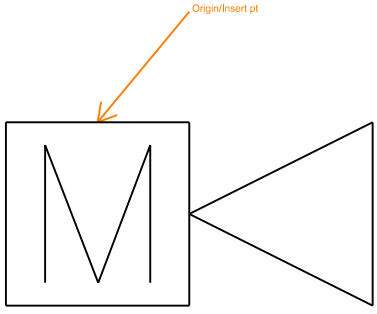
Fire Protection: HOSECS
HOSE STATION CHRGD STNDPIPE
Element type: Symbol



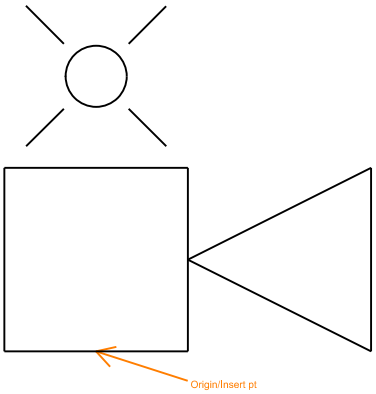
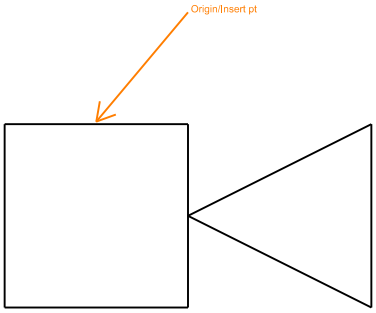
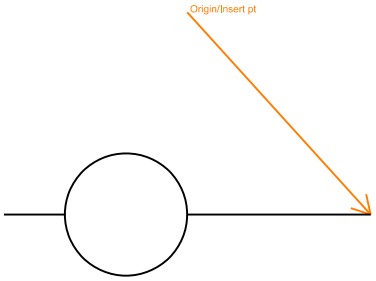
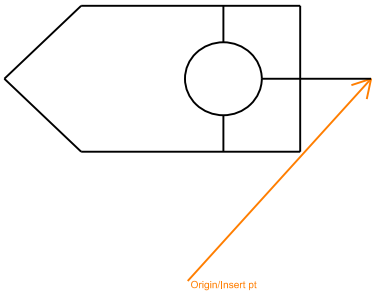
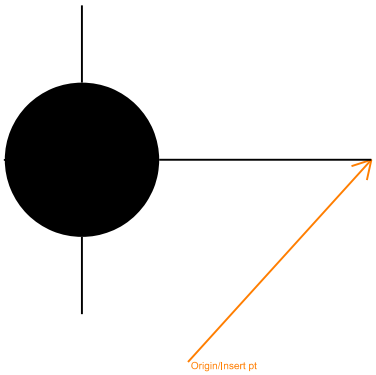
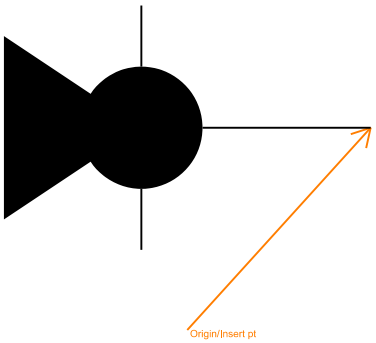
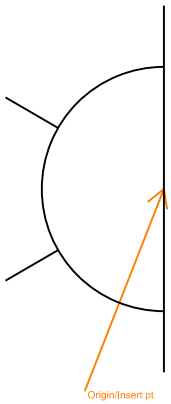
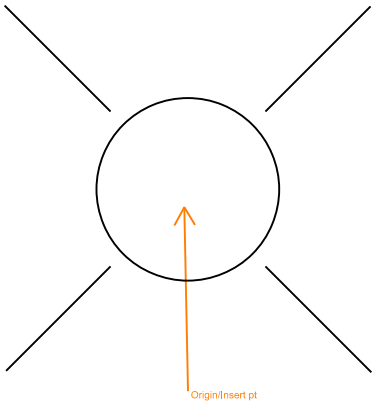
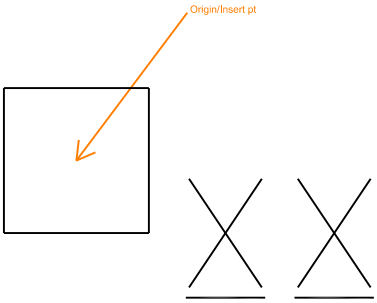
Fire Protection: HOSEDS
HOSE STATION DRY STANDPIPE
Element type: Symbol

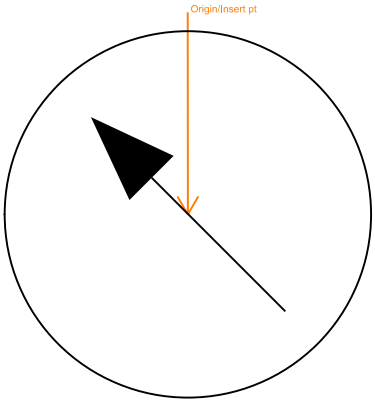
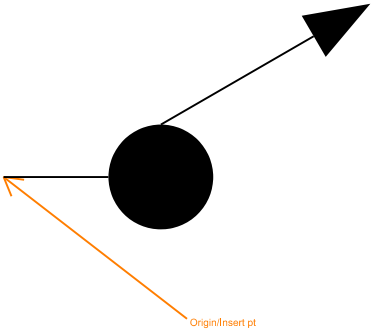
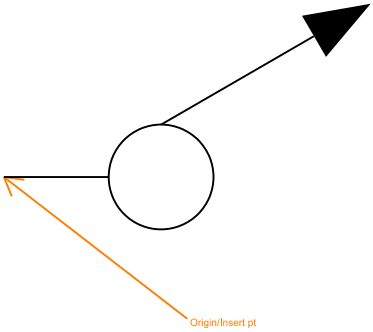
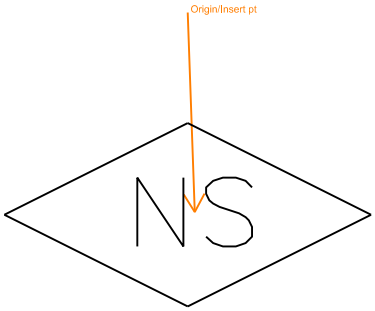
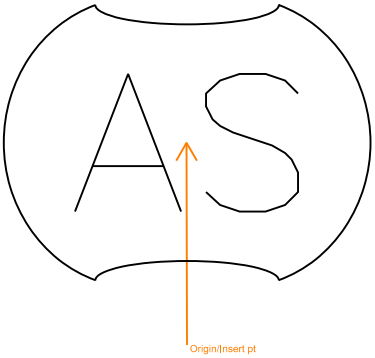
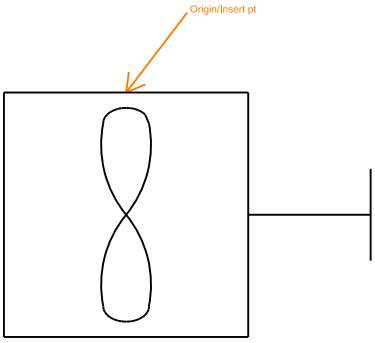
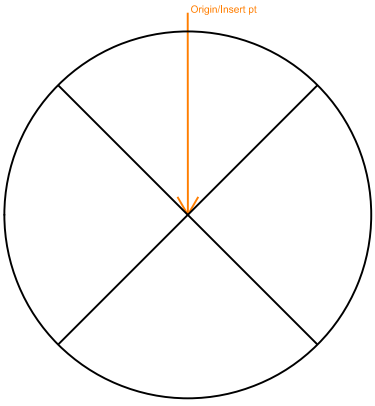
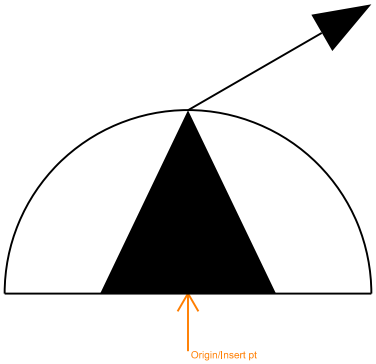
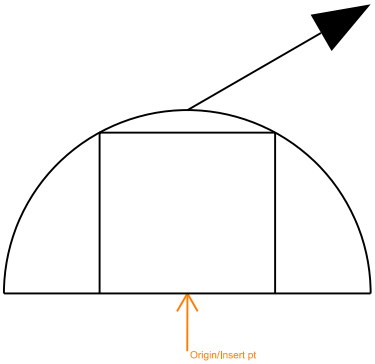


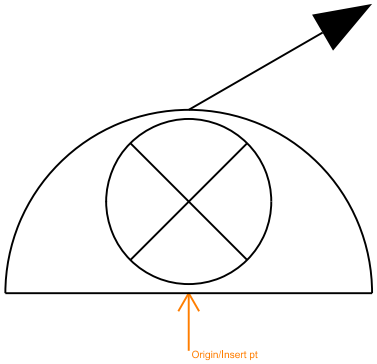
Fire Protection: HRN1A
HORN LIGHT 1 ASSY
Element type: Symbol



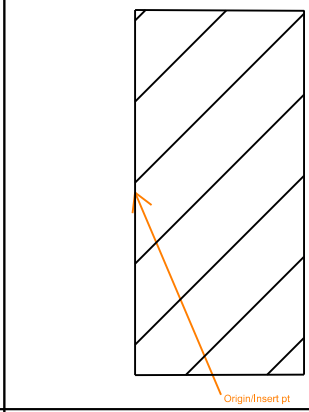
Fire Protection: HRNMIN
MINI HORN
Element type: Symbol

		
Fire Protection: HRNSA SEPARATE ASSEMBLY HORN LGHT Element type: Symbol	Fire Protection: HRNSPK HORN SPEAKER Element type: Symbol	Fire Protection: HYDPR1 PRIV HYDRANT 1 HOSE OUTLET Element type: Symbol
		
Fire Protection: HYDPR2 PRIVATE HOUSED HYDRANT Element type: Symbol	Fire Protection: HYDPU2 PUBLIC TWO HOSE OUTLET HYD Element type: Symbol	Fire Protection: HYDPUP PUBHYDRNT2HOSOUTLTPMPCONN Element type: Symbol
		
Fire Protection: HYDW2H WALL HYDRANT 2 HOSE OUTLET Element type: Symbol	Fire Protection: LITFAS FA STROBE LIGHT Element type: Symbol	Fire Protection: MANSTA MANUAL STATION Element type: Symbol

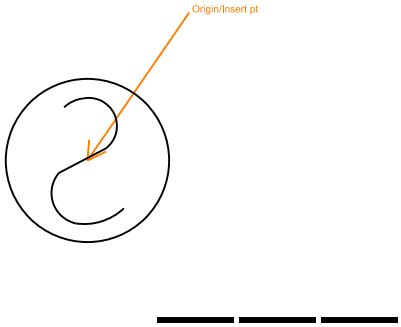
		
Fire Protection: METRFP FP METER Element type: Symbol	Fire Protection: MNCHRG MONITOR NOZZLE CHARGED Element type: Symbol	Fire Protection: MNDRY MONITOR NOZZLE DRY Element type: Symbol
		
Fire Protection: NONSS NONSPRINKLERED SPACE Element type: Symbol	Fire Protection: PARTSS PARTIALLY SPRINKLERED SPACE Element type: Symbol	Fire Protection: PURGE MANUAL PURGE CONTROL Element type: Symbol
		
Fire Protection: RISER RISER Element type: Symbol	Fire Protection: RSCO2 C02 REEL STATION Element type: Symbol	Fire Protection: RSDRYC DRY CHEMICAL REEL STATION Element type: Symbol



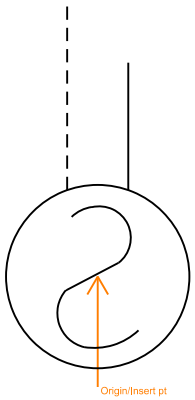
Fire Protection: RSFOAM
FOAM REEL STATION
Element type: Symbol



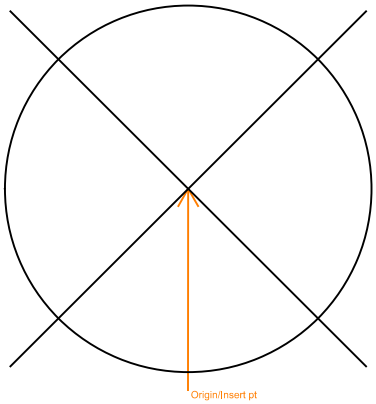
Fire Protection: SCREEN
SCREEN
Element type: Symbol



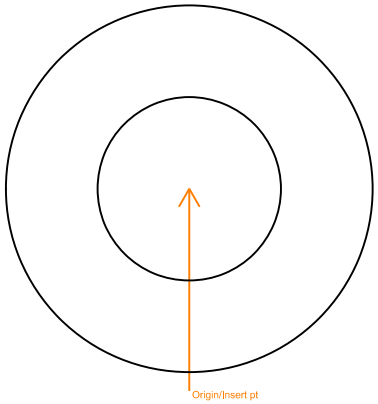
Fire Protection: SD
SMOKE DETECTOR
Element type: Symbol



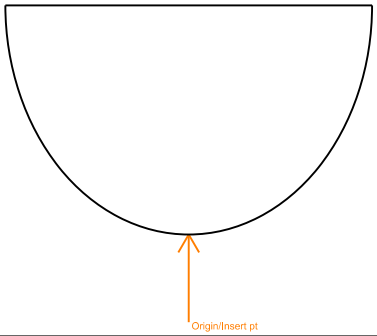
Fire Protection: SDUCT
SMOKE DETECTOR FOR DUCT
Element type: Symbol



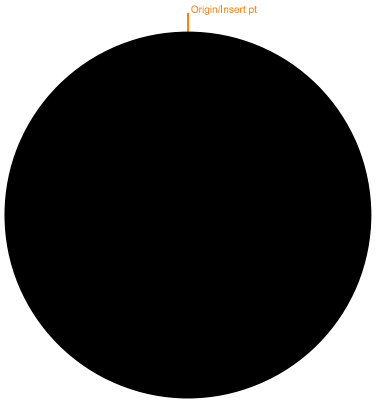
Fire Protection: SHGARD
SPRINKLER HEAD W GUARD
Element type: Symbol



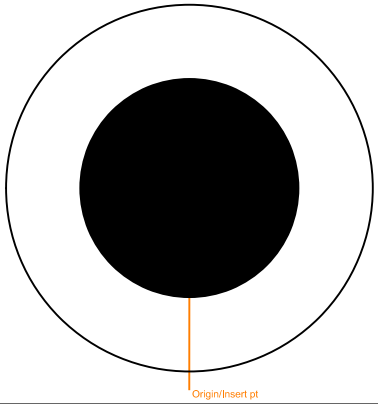
Fire Protection: SHNUU
NIPPLED UP UPRIGHT SPRNKLR
Element type: Symbol



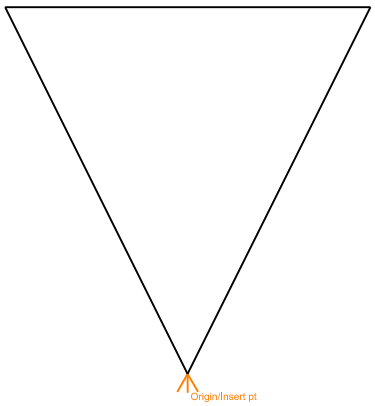
Fire Protection: SHOUT
OUTSIDE SPRINKLER HEAD
Element type: Symbol



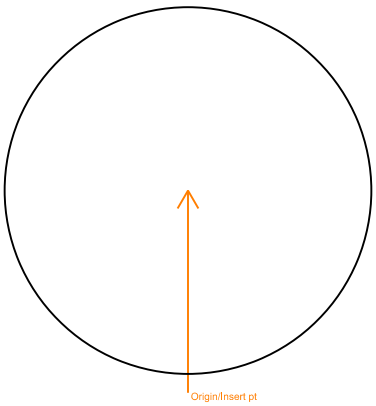
Fire Protection: SHPEND
PENDENT SPRINKLER HEAD
Element type: Symbol



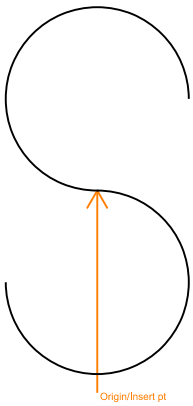
Fire Protection: SHPNDN
PENDENTSPRNKLR DROP NIPPL
Element type: Symbol



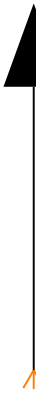
Fire Protection: SHSIDE
SIDEWALL SPRINKLER HEAD
Element type: Symbol



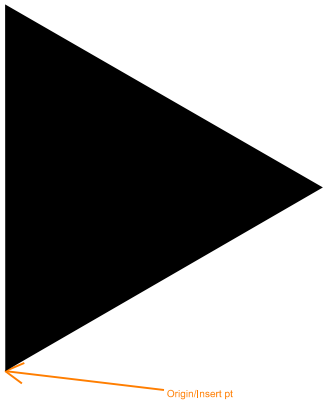
Fire Protection: SHUPRT
UPRIGHT SPRINKLER HEAD
Element type: Symbol



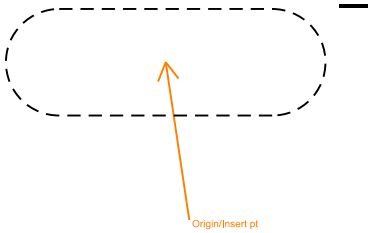
Fire Protection: SMKBR
SMOKE BARRIER
Element type: Symbol



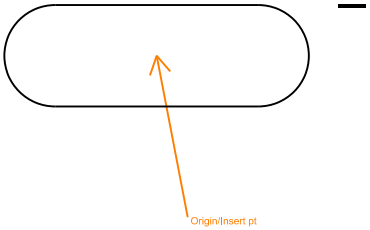
Fire Protection: SSNOZZ
SPECIAL SPRAY NOZZLE
Element type: Symbol



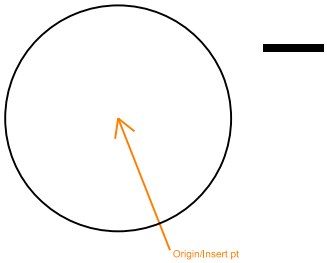
Fire Protection: THRUST
THRUST BLOCK
Element type: Symbol



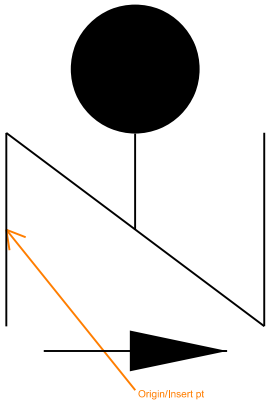
Fire Protection: TNKBG
TANK BELOW GROUND
Element type: Symbol



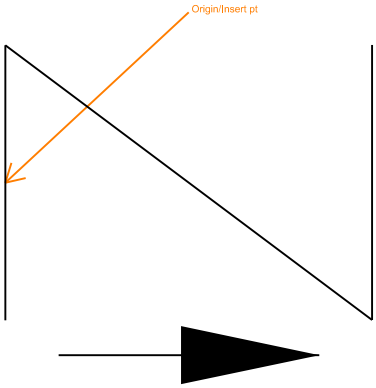
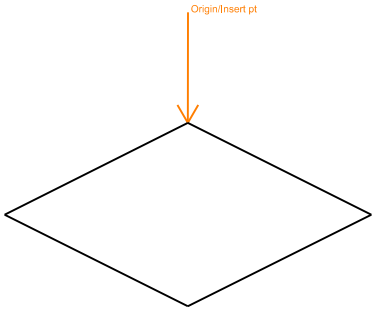
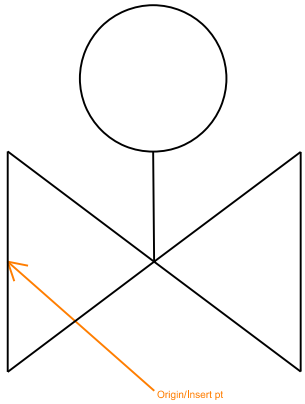
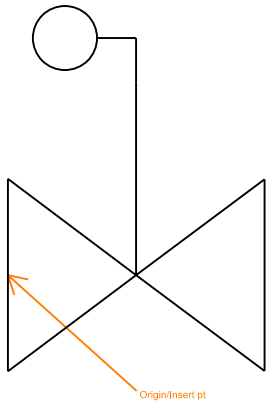
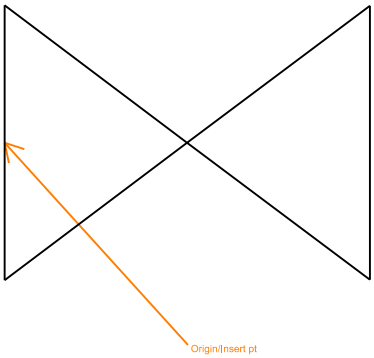
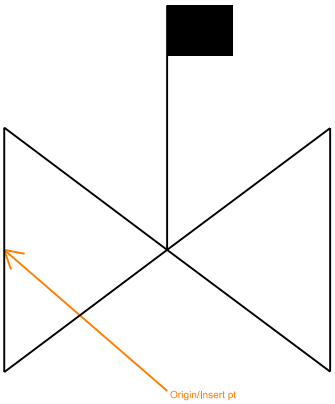
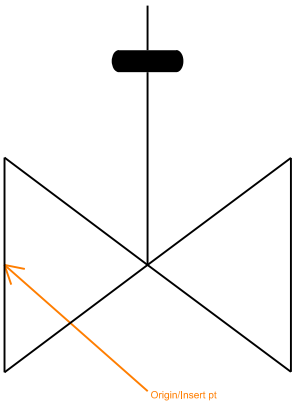
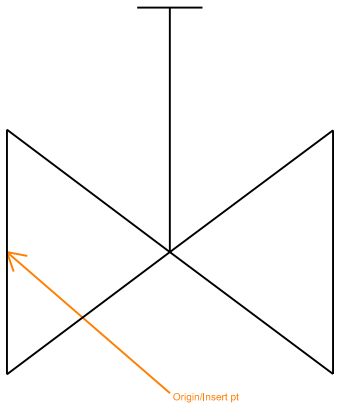
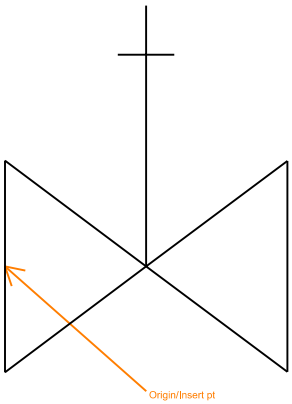
Fire Protection: TNKHAG
TANK HORIZ ABOVE GROUND
Element type: Symbol

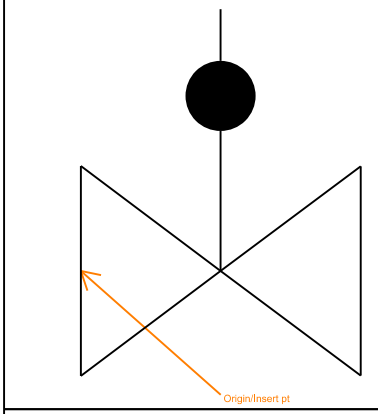


Fire Protection: TNKVAG
TANK VERTICAL ABOVE GROUND
Element type: Symbol

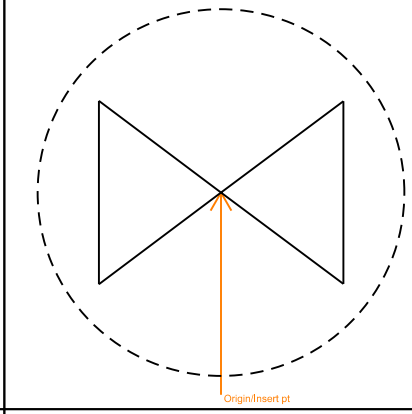


Fire Protection: VLVCHA
ALARM CHECK VALVE
Element type: Symbol

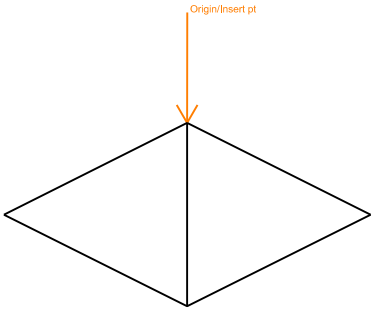
		
Fire Protection: VLVCHK CHECK VALVE Element type: Symbol	Fire Protection: VLVDEL DELUGE VALVE Element type: Symbol	Fire Protection: VLVDRY DRY PIPE VALVE Element type: Symbol
		
Fire Protection: VLVFLT FLOAT VALVE Element type: Symbol	Fire Protection: VLVGEN GENERAL VALVE Element type: Symbol	Fire Protection: VLVIBF INDICATING BUTTERFLY VALVE Element type: Symbol
		
Fire Protection: VLVKEY KEY OPERATED VALVE Element type: Symbol	Fire Protection: VLVNON VALVE NONRISING STEM Element type: Symbol	Fire Protection: VLVOSY OS Y VALVE Element type: Symbol



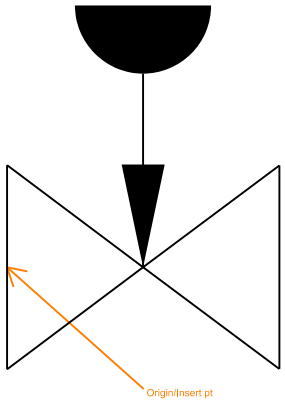
Fire Protection: VLVPI
POST INDICATOR VALVE
Element type: Symbol



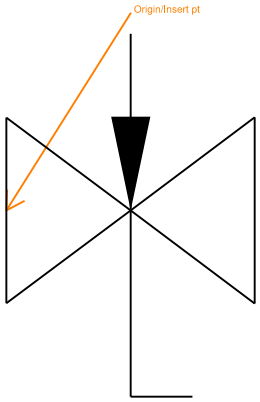
Fire Protection: VLVPIT
VALVE IN PIT
Element type: Symbol



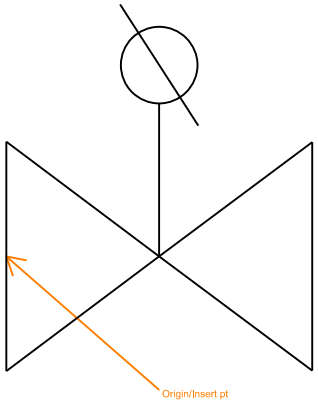
Fire Protection: VLVPRE
PREACTION VALVE
Element type: Symbol



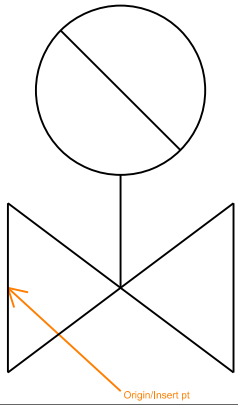
Fire Protection: VLVPRG
PRESSURE REGULATING VALVE
Element type: Symbol



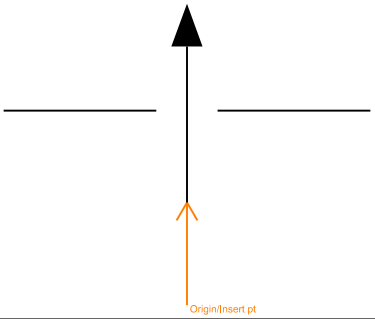
Fire Protection: VLVPRV
PRESSURE RELIEF VALVE
Element type: Symbol



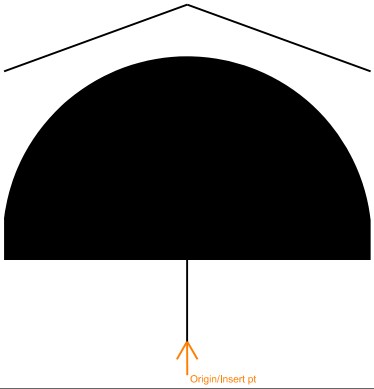
Fire Protection: VLVQOD
VALVE W QUICK OPENNG DEVICE
Element type: Symbol



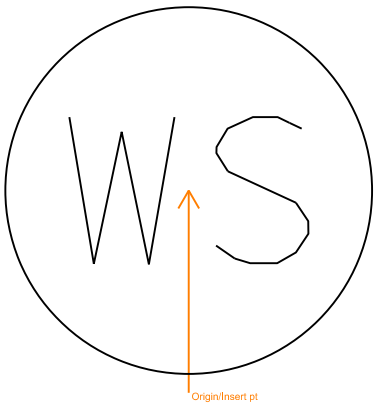
Fire Protection: VLVTDS
VALVE TAMPERDETECTION SWITC
Element type: Symbol



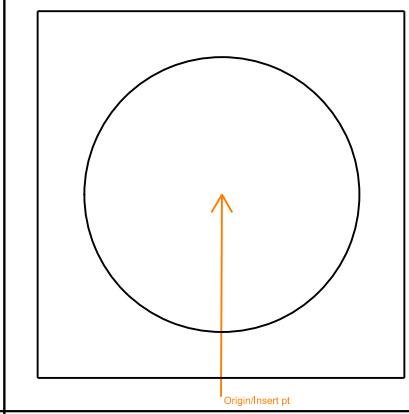
Fire Protection: VNTOPN
VENTILATION OPENINGS
Element type: Symbol



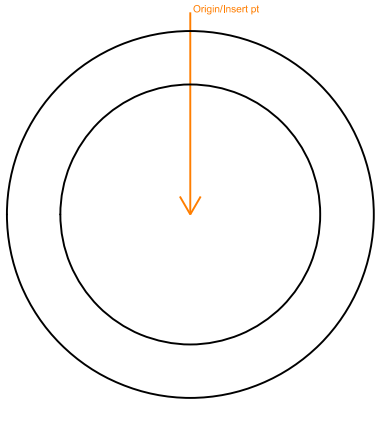
Fire Protection: WALARM
WATER MOTOR ALARM
Element type: Symbol



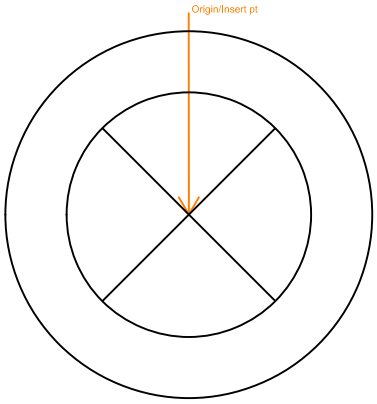
Fire Protection: WATRSS
WATER SPRAY SYSTEM
Element type: Symbol



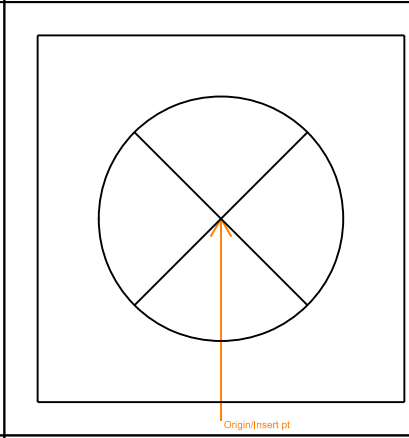
Fire Protection: WBDSMA
WATER BASED DRY SYS MAN ACT
Element type: Symbol



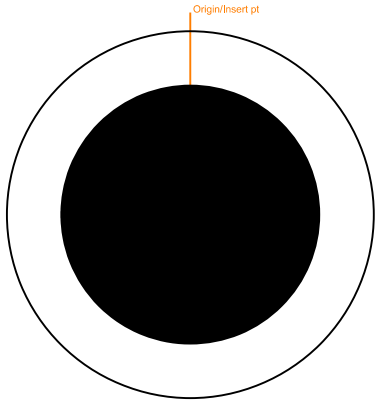
Fire Protection: WBDSSA
WATERBASED DRY SYS AUTO ACT
Element type: Symbol



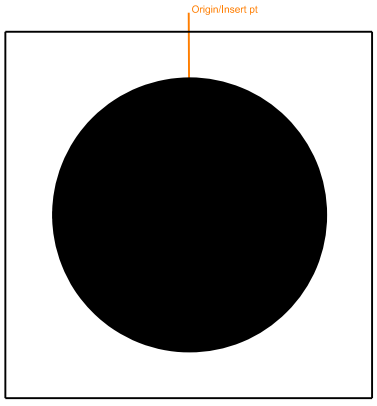
Fire Protection: WBFSAA
WATR BASED FOAM SYS AUTOACT
Element type: Symbol



Fire Protection: WBFSMA
WATR BASED FOAM SYS MANACT
Element type: Symbol



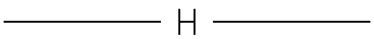
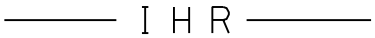
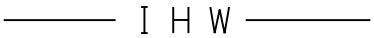
Fire Protection: WBWSAA
WATERBASED WET SYS AUTO ACT
Element type: Symbol



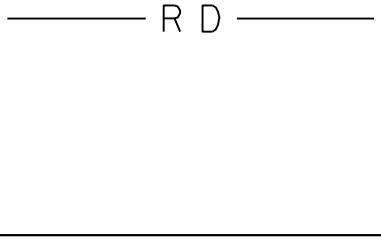
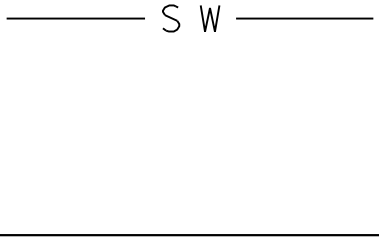
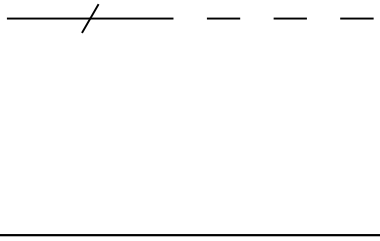
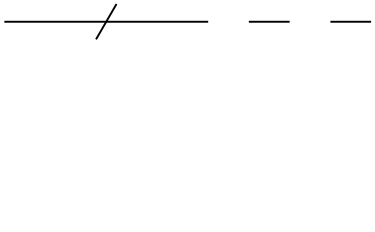
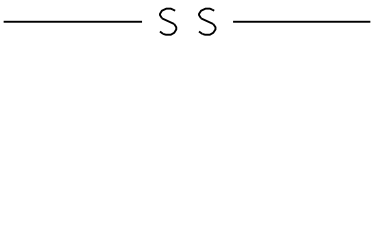
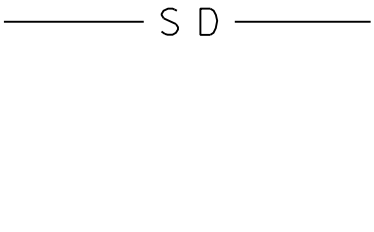
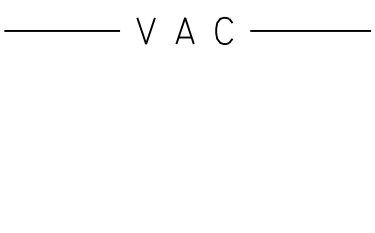
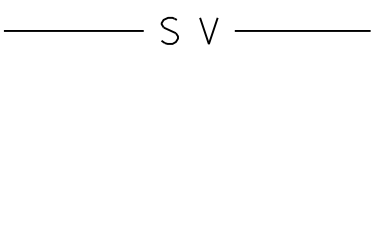
Fire Protection: WBWSMA
WATER BASED WET SYS MAN ACT
Element type: Symbol

11 Plumbing Lines Library

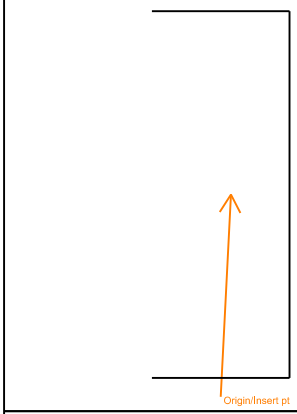
Plumbing: ACIDWS ACID WASTE Element type: Line	Plumbing: CDRNAF CONDENSATE DRAIN Element type: Line	Plumbing: CLDWTR POTABLE COLD WATER Element type: Line
Plumbing: CMPAIR COMPRESSED AIR Element type: Line	Plumbing: DIOWTR DEIONIZED WATER Element type: Line	Plumbing: DSTWTR DISTILLED WATER Element type: Line
Plumbing: FIRE FIRE PROTECTION WATR SUPPLY Element type: Line	Plumbing: FUELOR FUEL OIL RETURN Element type: Line	Plumbing: FUELOS FUEL OIL SUPPLY Element type: Line

Plumbing: FUELOV FUEL OIL TANK VENT Element type: Line	Plumbing: HELIUM HELIUM Element type: Line	Plumbing: HWTR POTABLE HOT WATER Element type: Line
		
Plumbing: HWTRR POTABLE HOT WATER RETURN Element type: Line	Plumbing: HYDRGN HYDROGEN Element type: Line	Plumbing: ICWTR INDUSTRIAL COLD WATER Element type: Line
		
Plumbing: IHWTRR INDUSTRIAL HOT WATER RETURN Element type: Line	Plumbing: IHWTRS INDUSTRIAL HOT WATER SUPPLY Element type: Line	Plumbing: INDDRN INDIRECT DRAIN Element type: Line

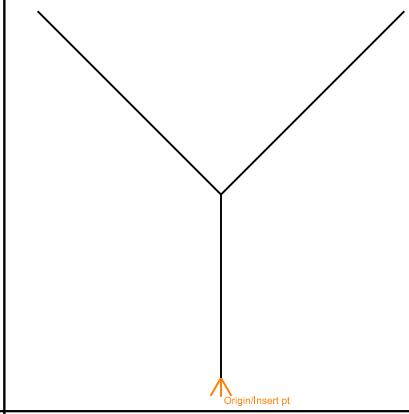
Plumbing: LIQNIT LIQUID NITROGEN Element type: Line	Plumbing: LIQOXY LIQUID OXYGEN Element type: Line	Plumbing: LIQPET LIQUID PETROLEUM GAS Element type: Line
Plumbing: NITOXI NITROUS OXIDE Element type: Line	Plumbing: NITROG NITROGEN Element type: Line	Plumbing: NONPOT NONPOTABLE WATER Element type: Line
Plumbing: NTGASN NATURAL GAS Element type: Line	Plumbing: OXYGEN OXYGEN Element type: Line	Plumbing: PNTUBE PNEUMATIC TUBE RUNS Element type: Line

		
Plumbing: ROOFDN ROOF DRAIN Element type: Line	Plumbing: SFCWTR SOFT WATER Element type: Line	Plumbing: SHWTRR SANITIZING HOT WATER RETURN Element type: Line
		
Plumbing: SHWTRS SANITIZING HOT WATER SUPPLY Element type: Line	Plumbing: SSWAF SANITARY SEWER Element type: Line	Plumbing: STRAF STORM DRAIN Element type: Line
		
Plumbing: VACAIR VACUUM AIR Element type: Line	Plumbing: VENT VENT Element type: Line	Plumbing: VENTWS VENT AND WASTE COMBINATION Element type: Line

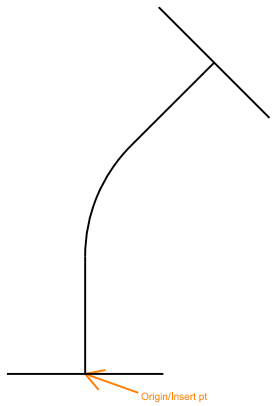
11 Plumbing Symbols Library



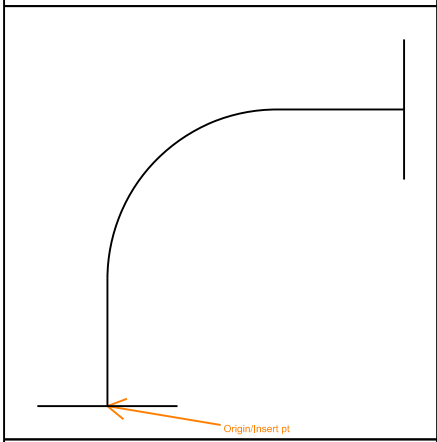
Plumbing: CAPSC
CAP
Element type: Symbol



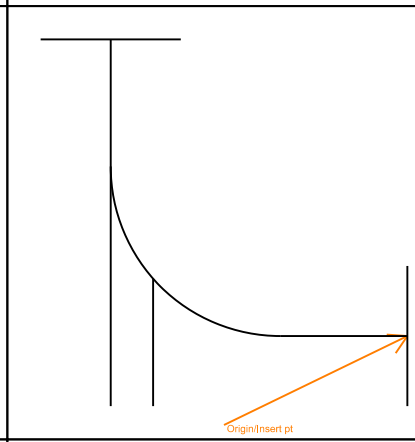
Plumbing: DRNFUN
OPEN DRAIN FUNNEL
Element type: Symbol



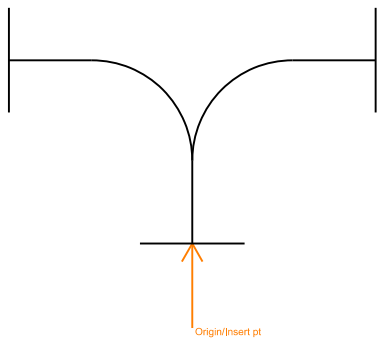
Plumbing: EL45SC
45 DEGREE ELBOW
Element type: Symbol



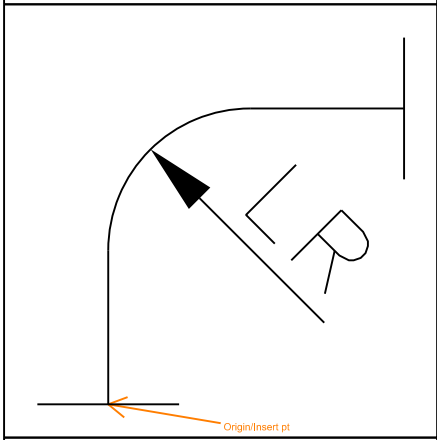
Plumbing: EL90SC
90 DEGREE ELBOW
Element type: Symbol



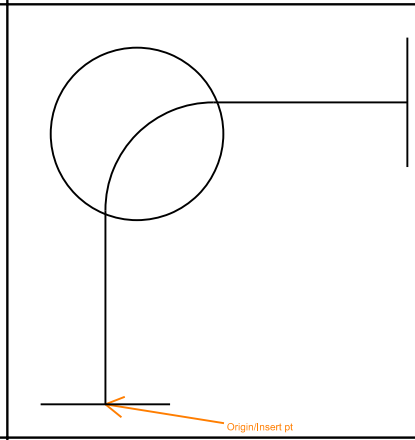
Plumbing: ELBSC
BASE ELBOW
Element type: Symbol



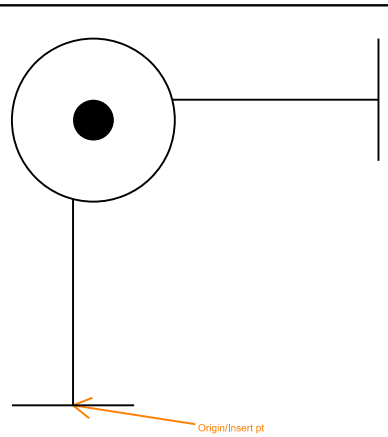
Plumbing: ELDBSC
DOUBLE BRANCH ELBOW
Element type: Symbol



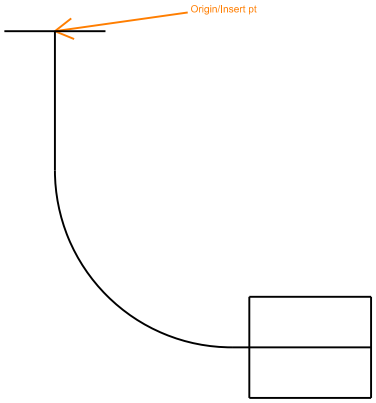
Plumbing: ELLRSC
LONG RADIUS ELBOW
Element type: Symbol



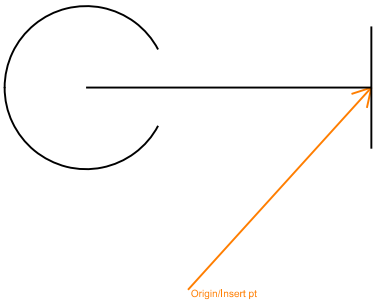
Plumbing: ELODSC
ELBOW SIDE OUTLET DOWN
Element type: Symbol



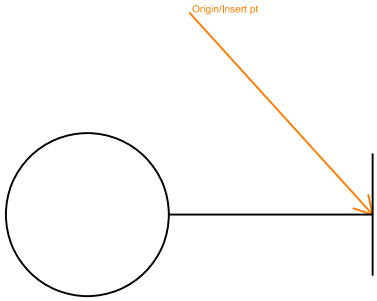
Plumbing: ELOUSC
ELBOW SIDE OUTLET UP
Element type: Symbol



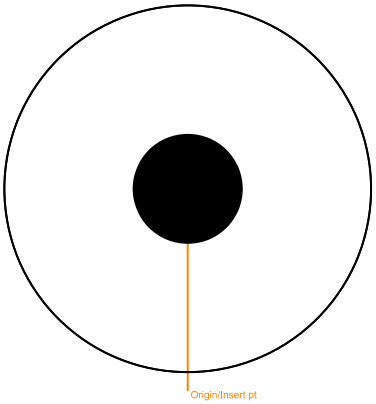
Plumbing: ELSTRT
STREET ELBOW
Element type: Symbol



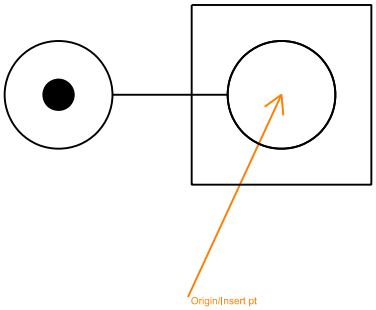
Plumbing: ELTDSC
TURNED DOWN ELBOW
Element type: Symbol



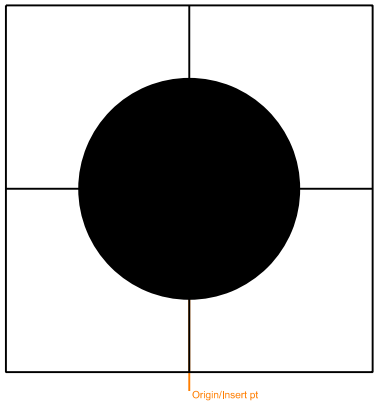
Plumbing: ELTUSC
TURNED UP ELBOW
Element type: Symbol



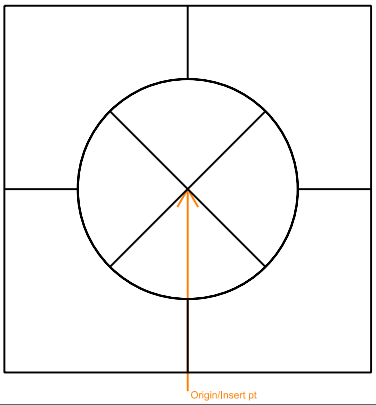
Plumbing: FCO
FLOOR CLEANOUT
Element type: Symbol



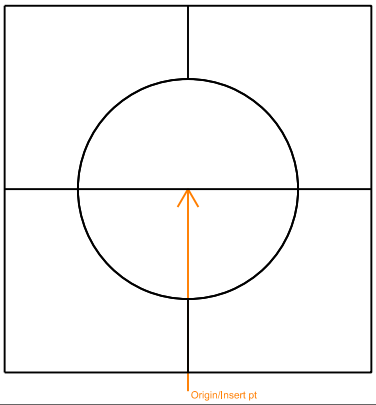
Plumbing: FDCO
FLOOR DRAIN WITH CLEANOUT
Element type: Symbol



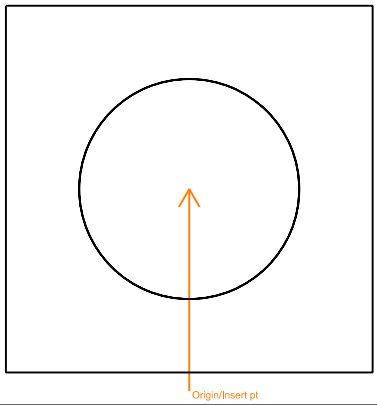
Plumbing: FDDT
FLOOR DRAIN WITH DEEP TRAP
Element type: Symbol



Plumbing: FDNT
FLOOR DRAIN WITH NO TRAP
Element type: Symbol

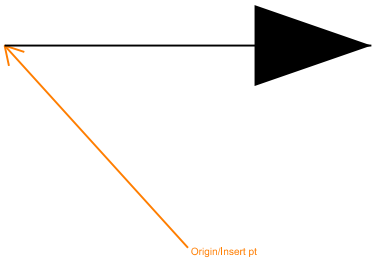


Plumbing: FDTP
FLOOR DRAIN WITH TRAP PRIME
Element type: Symbol

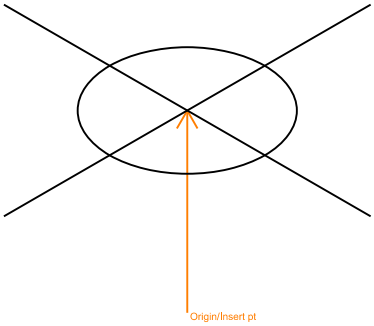


Plumbing: FDWT
FLOOR DRAIN WITH TRAP
Element type: Symbol

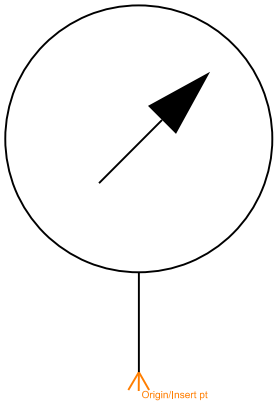
Plumbing: FLBLND
BLIND FLANGE
Element type: Symbol



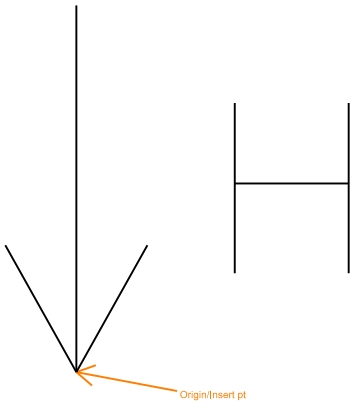
Plumbing: FLOW3
FLOW ARROW
Element type: Symbol



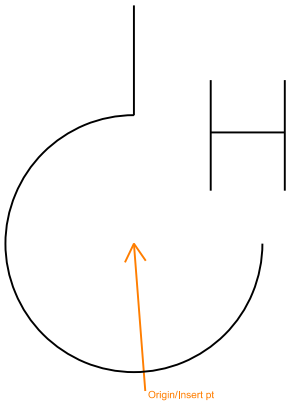
Plumbing: FLRPEN
FLOOR PENETRATION ISO
Element type: Symbol



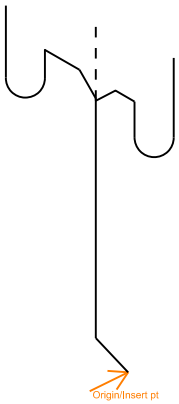
Plumbing: GAUGE
GAUGE
Element type: Symbol



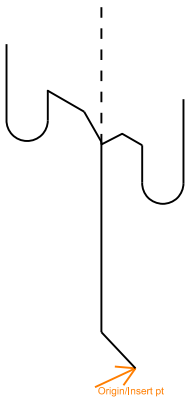
Plumbing: HANGRD
HANGER ROD
Element type: Symbol



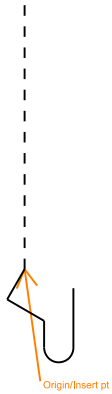
Plumbing: HANGSP
HANGER SPRING
Element type: Symbol



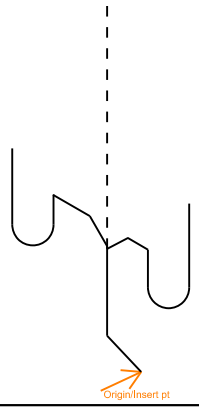
Plumbing: ISOEWC
ISOMETRIC EWC
Element type: Symbol



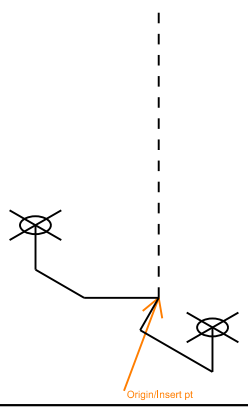
Plumbing: ISOLAV
ISOMETRIC LAVATORIES
Element type: Symbol



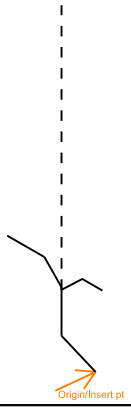
Plumbing: ISOMOP
ISO MOP SINK
Element type: Symbol



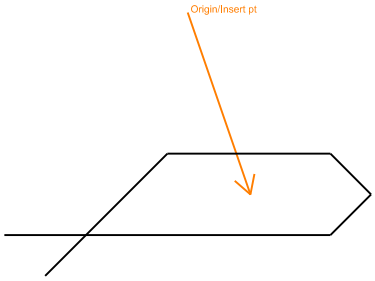
Plumbing: ISOUR1
ISO WALL MOUNTED URINAL
Element type: Symbol



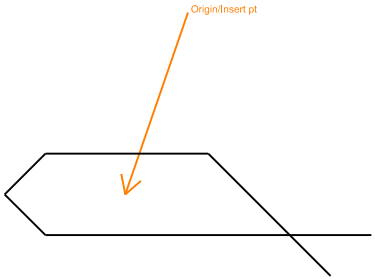
Plumbing: ISOWC1
ISO FLOOR MOUNTED WC
Element type: Symbol



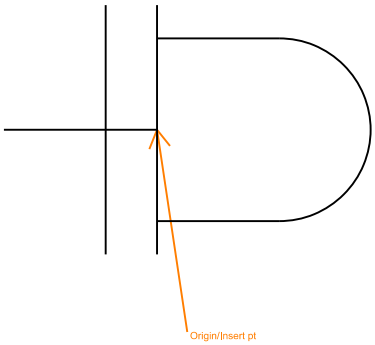
Plumbing: ISOWC2
ISO WALL MOUNTED WC
Element type: Symbol



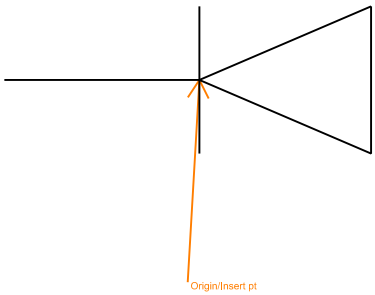
Plumbing: LOOPL
LEFT DIMENSION LOOP
Element type: Symbol



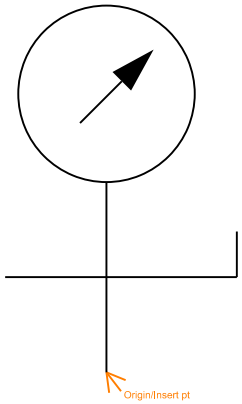
Plumbing: LOOPR
RIGHT DIMENSION LOOP
Element type: Symbol



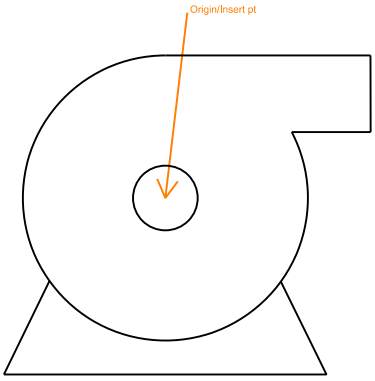
Plumbing: PLGBFL
BULL PLUG FLANGED
Element type: Symbol



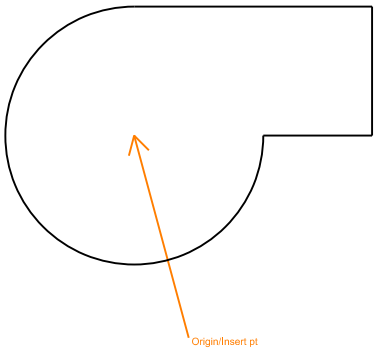
Plumbing: PLGPSC
PIPE PLUG
Element type: Symbol



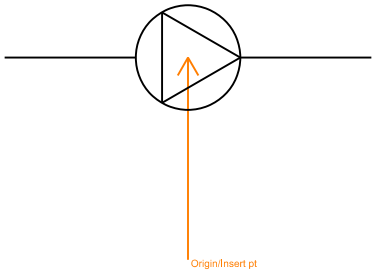
Plumbing: PRGGCO
PRESSURE GAGE AND COCK
Element type: Symbol



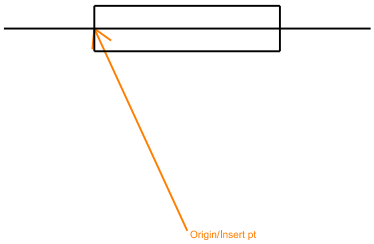
Plumbing: PUMP
PUMP
Element type: Symbol



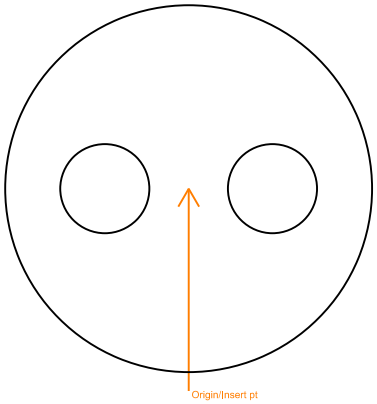
Plumbing: PUMPP
PUMP SCHEMATIC
Element type: Symbol



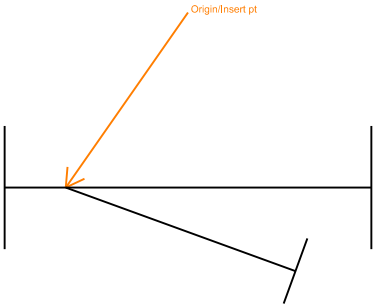
Plumbing: PUMPS
INLINE PUMP
Element type: Symbol



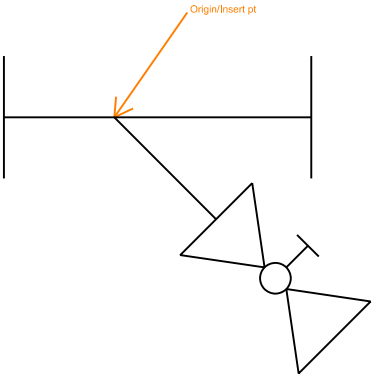
Plumbing: SLEEVE
SLEEVE
Element type: Symbol



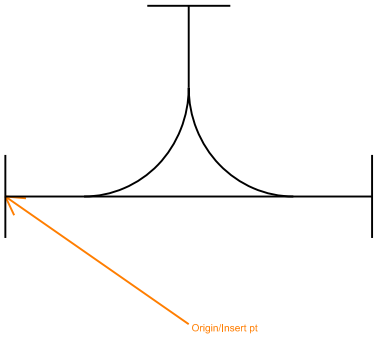
Plumbing: STGLAS
SIGHT GLASS
Element type: Symbol



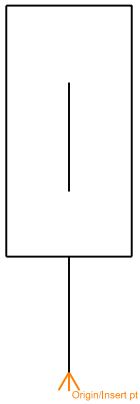
Plumbing: STRAIN
STRAINER
Element type: Symbol



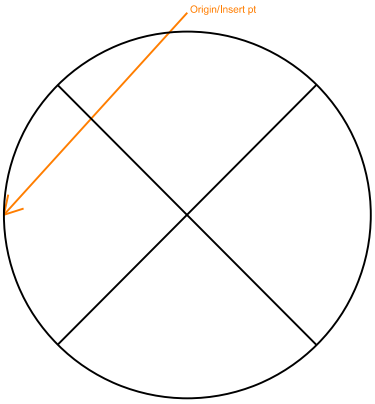
Plumbing: STRBLO
BLOW OFF STRAINER
Element type: Symbol



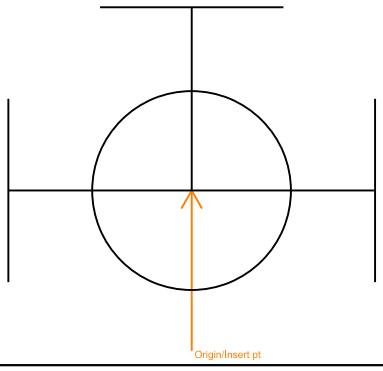
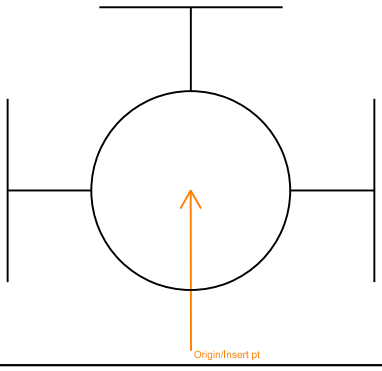
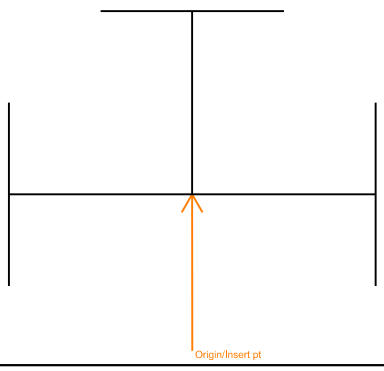
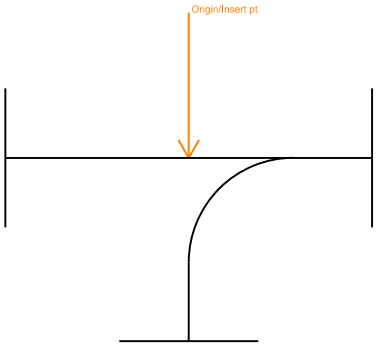
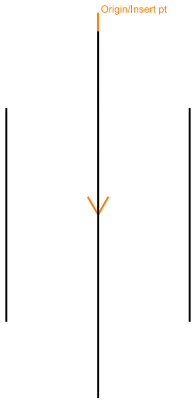
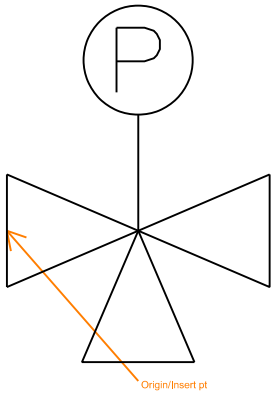
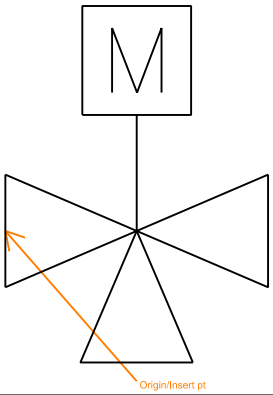
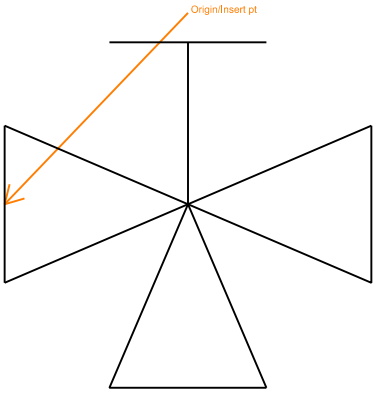
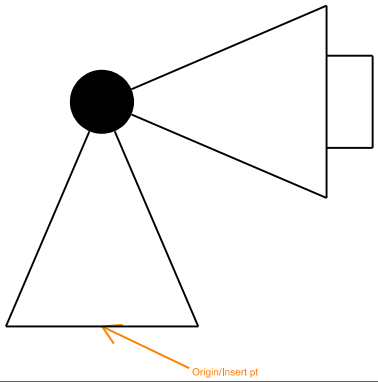
Plumbing: TDSSC
DOUBLE SWEEP TEE
Element type: Symbol

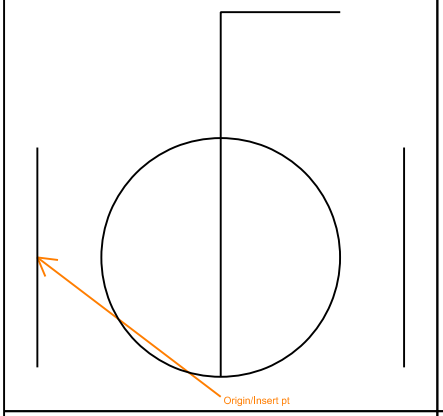


Plumbing: THERM
THERMOMETER
Element type: Symbol

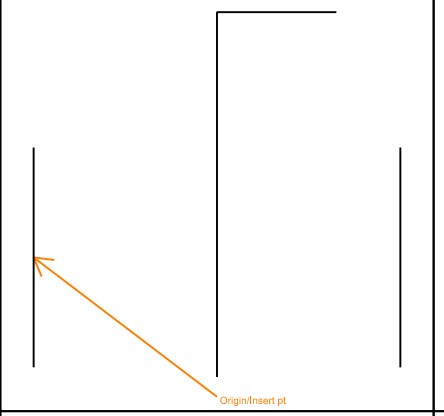


Plumbing: TRAPST
STEAM TRAP
Element type: Symbol

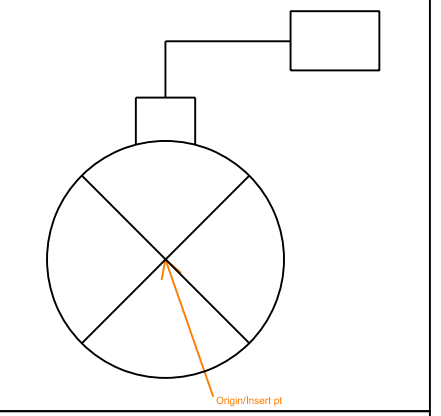
		
Plumbing: TSODSC TEE SIDE OUTLET DOWN Element type: Symbol	Plumbing: TSOUSC TEE SIDE OUTLET UP Element type: Symbol	Plumbing: TSSSC TEE Element type: Symbol
		
Plumbing: TSSWSC SINGLE SWEEP TEE Element type: Symbol	Plumbing: UNIOSC UNION Element type: Symbol	Plumbing: VA3WAM 3WAY AIRMOTOR CONTROLER Element type: Symbol
		
Plumbing: VA3WEM 3WAY ELECMOTOR CONTRLE Element type: Symbol	Plumbing: VA3WM 3 WAY MANUAL VALVE Element type: Symbol	Plumbing: VAAHOS ANGLE HOSE VALVE Element type: Symbol



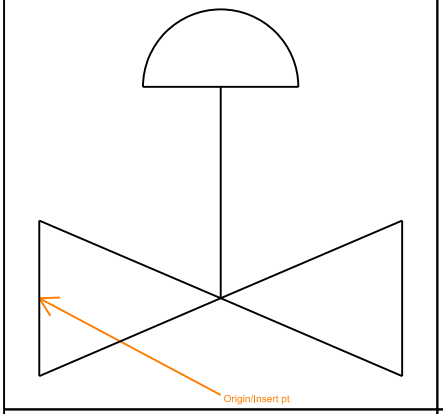
Plumbing: VABALL
BALL VALVE PLAN
Element type: Symbol



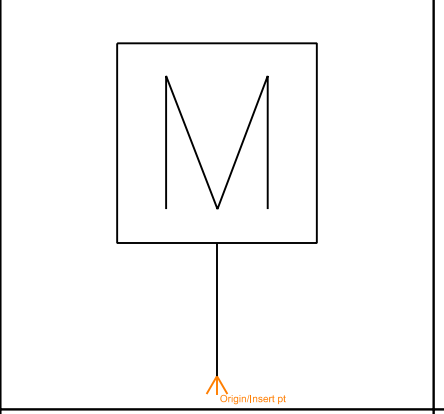
Plumbing: VABFLY
BUTTERFLY VALVE
Element type: Symbol



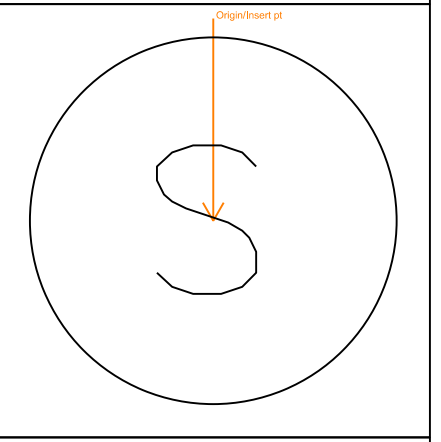
Plumbing: VACWR
CONDENSWATER REGULATVALVE
Element type: Symbol



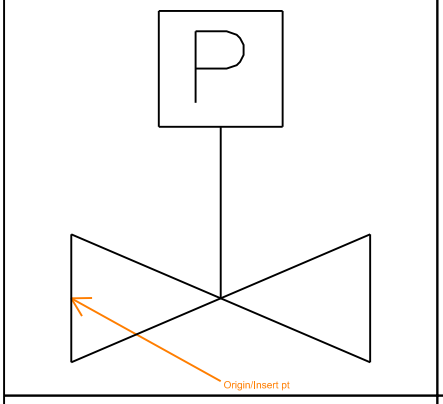
Plumbing: VADISC
DIAPHRAGM VALVE
Element type: Symbol



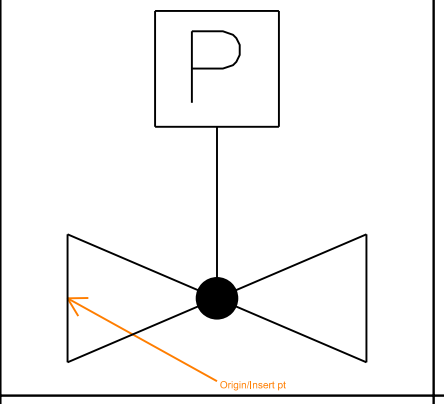
Plumbing: VAEMTR
PNEUMATIC MOTOR
Element type: Symbol



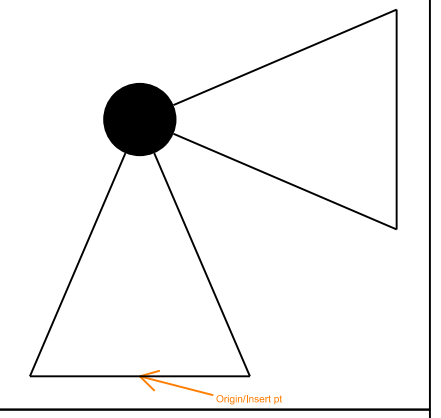
Plumbing: VAESOL
SOLENOID VALVE ACTUATOR
Element type: Symbol



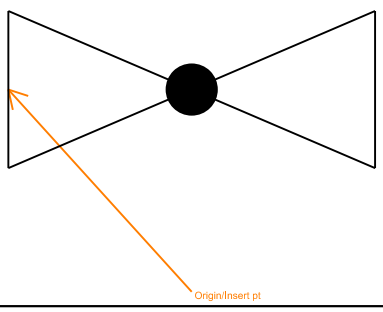
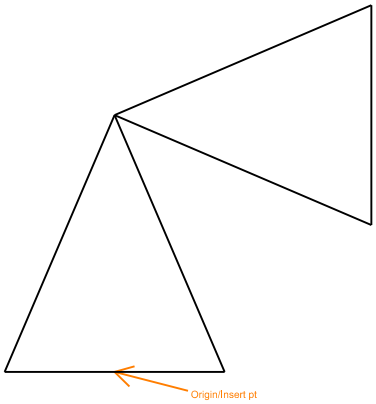
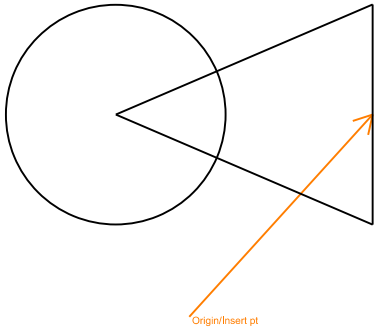
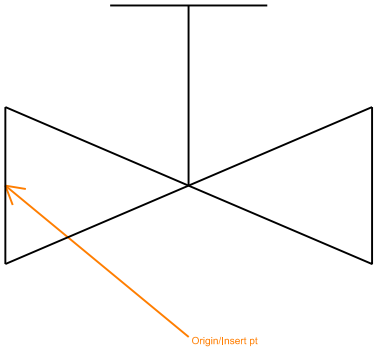
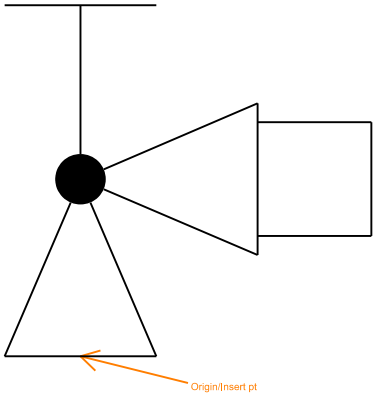
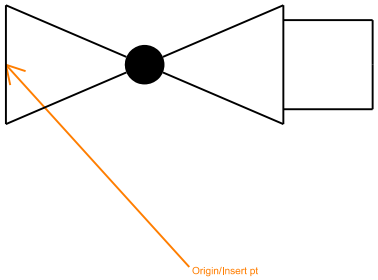
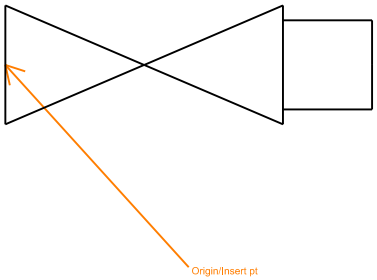
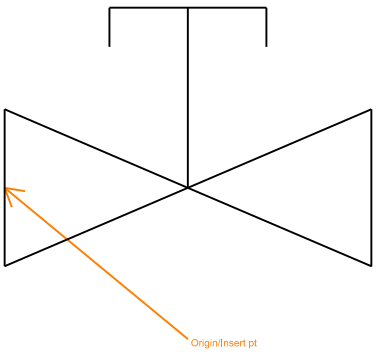
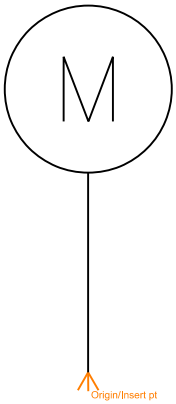
Plumbing: VAGAMC
PNEUMATIC CTRLD GATE VALVE
Element type: Symbol

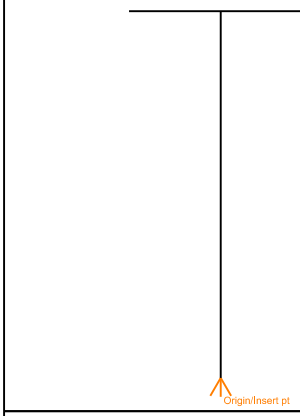


Plumbing: VAGLAM
PNEUMATIC CTRLD GLOBE VLV
Element type: Symbol

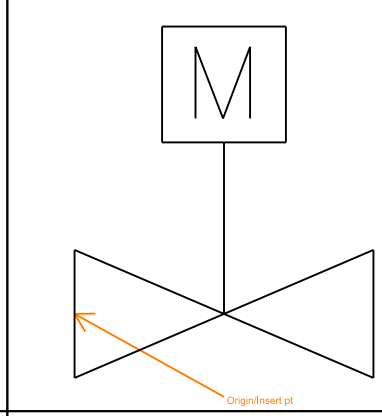


Plumbing: VAGLE
ANGLE GLOBE VALVE
Element type: Symbol

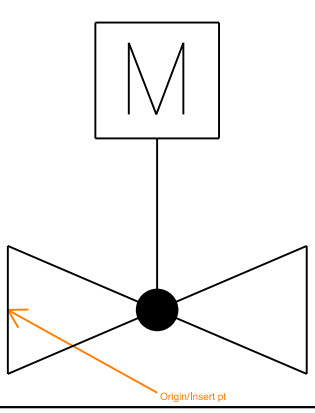
		
Plumbing: VAGLSE GLOBE VALVE Element type: Symbol	Plumbing: VAGSE ANGLE GATE VALVE Element type: Symbol	Plumbing: VAGSP ANGLE GATE VALVE PLAN Element type: Symbol
		
Plumbing: VAGTSE GATE VALVE Element type: Symbol	Plumbing: VAHASC GATE VALVE PLAN Element type: Symbol	Plumbing: VAHGLS HOSE GLOBE VALVE Element type: Symbol
		
Plumbing: VAHGSC HOSE GATE VALVE Element type: Symbol	Plumbing: VALSSC LOCK SHIELD VALVE Element type: Symbol	Plumbing: VAMAGS MAGNETIC STOP VALVE Element type: Symbol



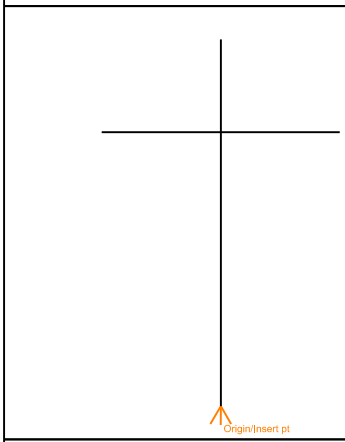
Plumbing: VAMNNS
VLV ACTUA MAN NONRISINGSTEM
Element type: Symbol



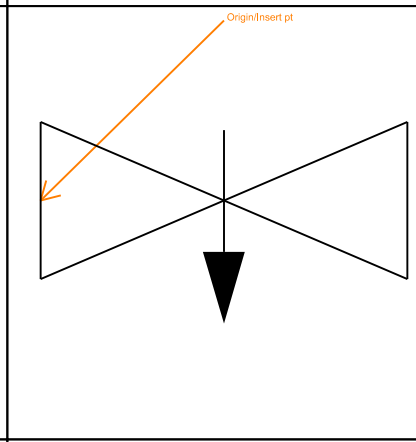
Plumbing: VAMOGS
MOTOR OPERATD GATE VALVE
Element type: Symbol



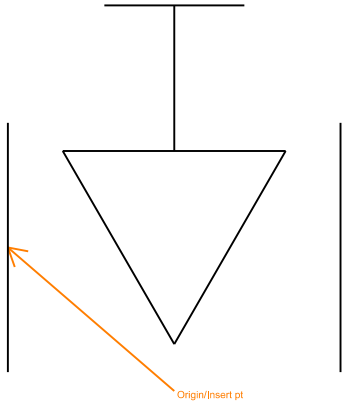
Plumbing: VAMOLS
MOTOR OPERATD GLOBE VALVE
Element type: Symbol



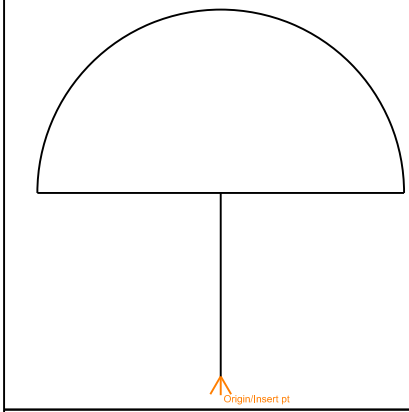
Plumbing: VAMOSY
VLV ACTTOR MAN OUTSTEM
Element type: Symbol



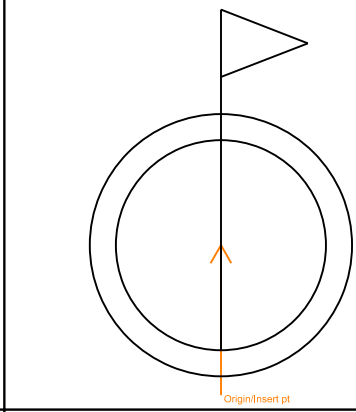
Plumbing: VANEED
NEEDLE VALVE
Element type: Symbol



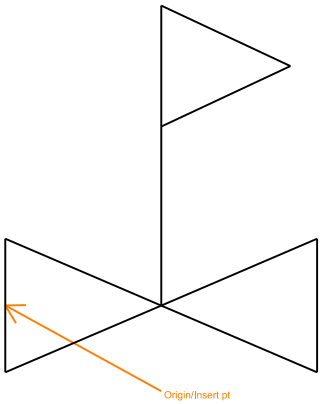
Plumbing: VAPLUG
PLUG VALVE
Element type: Symbol



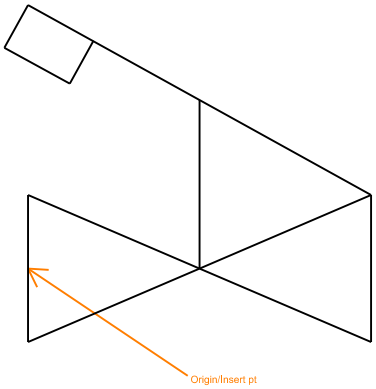
Plumbing: VAPMTD
VALVE ACTUATOR PNEUMOT
Element type: Symbol



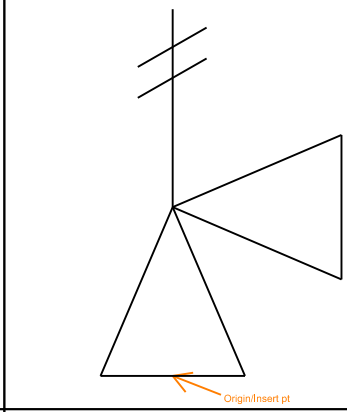
Plumbing: VAPRED
PRESSURE REDUCING VALVE
Element type: Symbol



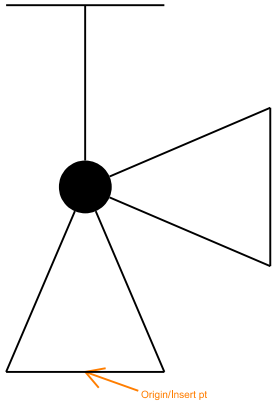
Plumbing: VAPRRD
PRESSURE REDUCING VALVE
Element type: Symbol



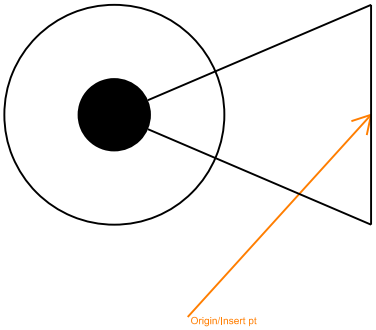
Plumbing: VAQOSC
QUICK OPENING VALVE
Element type: Symbol



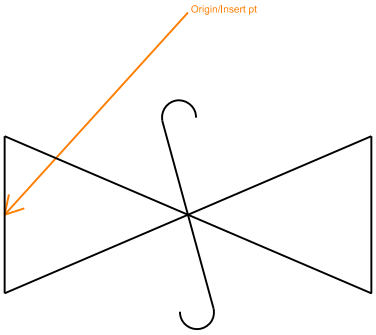
Plumbing: VARELF
RELIEF OR SAFETY VALVE
Element type: Symbol



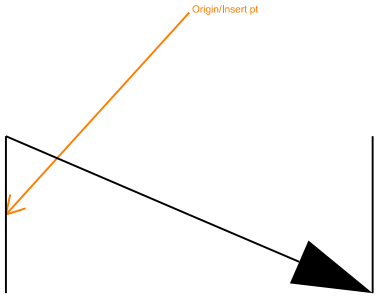
Plumbing: VASCE
ANGLE GLOBE VALVE
Element type: Symbol



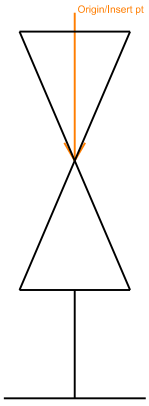
Plumbing: VASCP
ANGLE GLOBE VALVE PLAN
Element type: Symbol



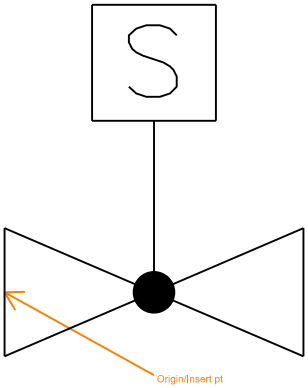
Plumbing: VASFSC
SAFETY VALVE
Element type: Symbol



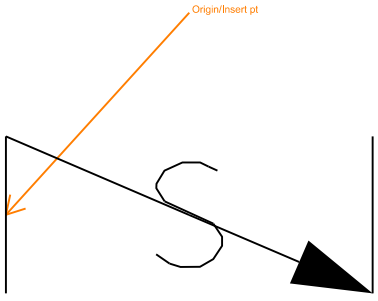
Plumbing: VASGCH
SWING GATE CHECK VALVE
Element type: Symbol



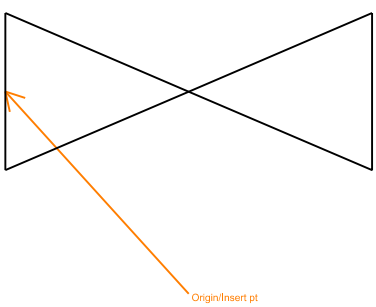
Plumbing: VASNAP
SNAP ACTION VALVE
Element type: Symbol



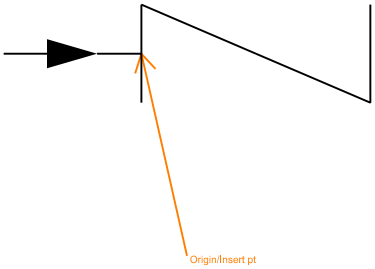
Plumbing: VASOLN
SOLENOID VALVE
Element type: Symbol



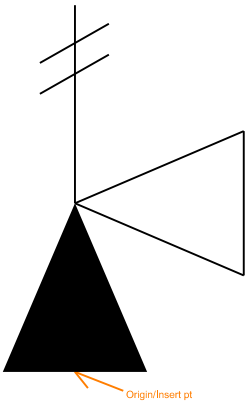
Plumbing: VASPCH
SPRING CHECK VALVE
Element type: Symbol



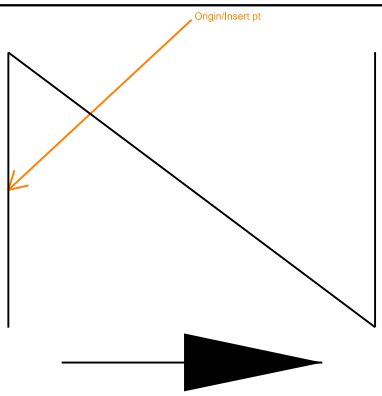
Plumbing: VASTSC
GATE VALVE
Element type: Symbol



Plumbing: VASWSC
STRAIGHT WAY CHECK VALVE
Element type: Symbol



Plumbing: VATPR
TEMP PRESSURE RELIEF VALVE
Element type: Symbol

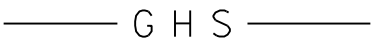
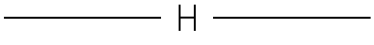


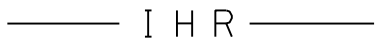
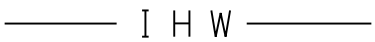
Plumbing: VLVCHK
CHECK VALVE
Element type: Symbol

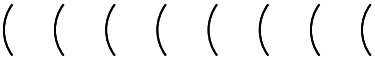
12 Mechanical Lines Library

Mechanical: ACIDWS ACID WASTE Element type: Line	Mechanical: AIRRLF AIR RELIEF Element type: Line	Mechanical: BOILBD BOILER BLOW DOWN Element type: Line
Mechanical: BRINER BRINE RETURN Element type: Line	Mechanical: BRINES BRINE SUPPLY Element type: Line	Mechanical: CDRNAF CONDENSATE DRAIN Element type: Line
Mechanical: CMPAIR COMPRESSED AIR Element type: Line	Mechanical: CONDP PUMPED CONDENSATE Element type: Line	Mechanical: CONDWR CONDENSER WATER RETURN Element type: Line

Mechanical: CONDWS CONDENSER WATER SUPPLY Element type: Line	Mechanical: CWR CHILLED WATER RETURN Element type: Line	Mechanical: CWS CHILLED WATER SUPPLY Element type: Line
Mechanical: DTR DUAL TEMPERATURE RETURN Element type: Line	Mechanical: DTS DUAL TEMPERATURE SUPPLY Element type: Line	Mechanical: FILL FILL LINE Element type: Line
Mechanical: FUELOR FUEL OIL RETURN Element type: Line	Mechanical: FUELOS FUEL OIL SUPPLY Element type: Line	Mechanical: FUELOV FUEL OIL TANK VENT Element type: Line

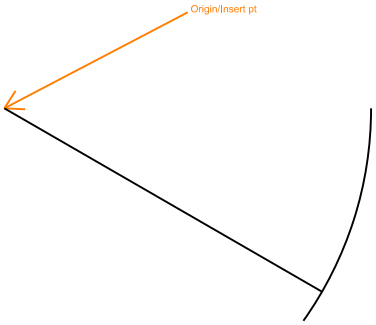
		
Mechanical: GHR GLYCOL HEATING RETURN Element type: Line	Mechanical: GHS GLYCOL HEATING SUPPLY Element type: Line	Mechanical: HPCNDR HIGH PRESSURE CONDENSATE Element type: Line
		
Mechanical: HTHWR HIGH TEMP HOT WATER RETURN Element type: Line	Mechanical: HTHWS HIGH TEMP HOT WATER SUPPLY Element type: Line	Mechanical: HUMID HUMIDIFICATION LINE Element type: Line
Mechanical: HWR LOW TEMP HOT WATER RETURN Element type: Line	Mechanical: HWS LOW TEMP HOT WATER SUPPLY Element type: Line	Mechanical: ICWTR INDUSTRIAL COLD WATER Element type: Line

		
Mechanical: IHWTRR INDUSTRIAL HOT WATER RETURN Element type: Line	Mechanical: IHWTRS INDUSTRIAL HOT WATER SUPPLY Element type: Line	Mechanical: IWASTE INDUSTRIAL WASTE Element type: Line
Mechanical: LPCNDR LOW PRESSURE CONDENSATE Element type: Line	Mechanical: MAKEUP MAKEUP WATER Element type: Line	Mechanical: MPCNDR MED PRESSURE CONDENSATE Element type: Line
Mechanical: MTHWR MED TEMP HOT WATER RETURN Element type: Line	Mechanical: MTHWS MED TEMP HOT WATER SUPPLY Element type: Line	Mechanical: NONPOT NONPOTABLE WATER Element type: Line

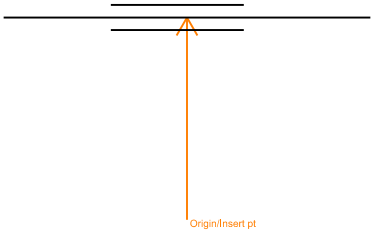
Mechanical: NTGASN NATURAL GAS Element type: Line	Mechanical: PNTUBE PNEUMATIC TUBE RUNS Element type: Line	Mechanical: REFRD REFRIGERANT DISCHARGE Element type: Line
Mechanical: REFRL REFRIGERANT LIQUID Element type: Line	Mechanical: REFRS REFRIGERANT SUCTION Element type: Line	Mechanical: STEAMH HIGH PRESSURE STEAM Element type: Line
		
Mechanical: STEAML LOW PRESSURE STEAM Element type: Line	Mechanical: STEAMM MED PRESSURE STEAM Element type: Line	Mechanical: TUVANE TURNING VANES Element type: Line

Mechanical: VACAIR VACUUM AIR Element type: Line	Mechanical: VACPD VACUUM PUMP DISCHARGE Element type: Line

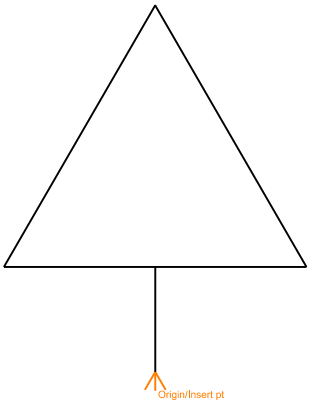
12 Mechanical Symbols Library



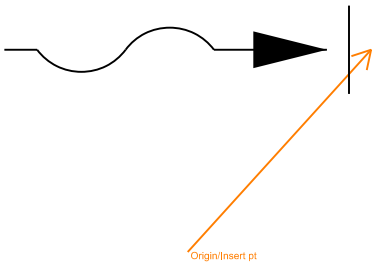
Mechanical: ACCDOR
DUCT ACCESS DOOR
Element type: Symbol



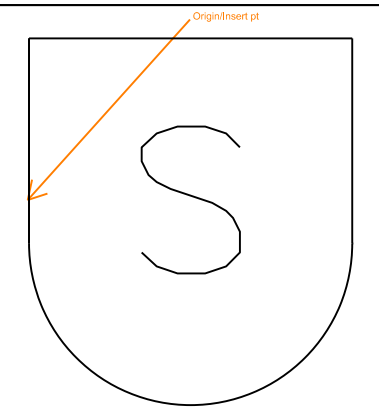
Mechanical: AGUIDE
ALIGNMENT GUIDE
Element type: Symbol



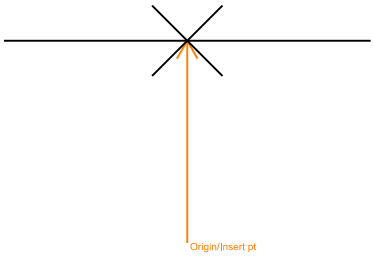
Mechanical: AIRELM
AIR ELIMINATOR
Element type: Symbol



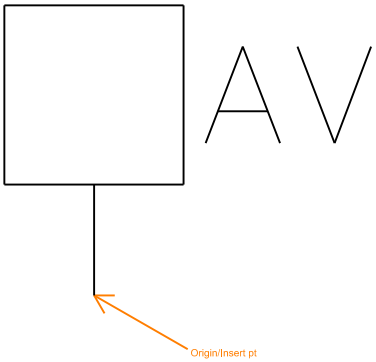
Mechanical: AIRIN
AIR IN
Element type: Symbol



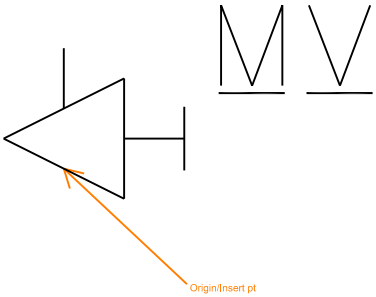
Mechanical: AIRSEP
AIR SEPARATOR
Element type: Symbol



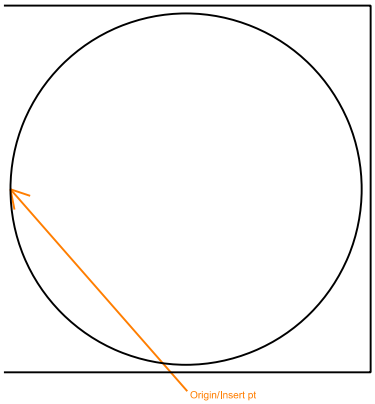
Mechanical: ANCHRI
ANCHOR
Element type: Symbol



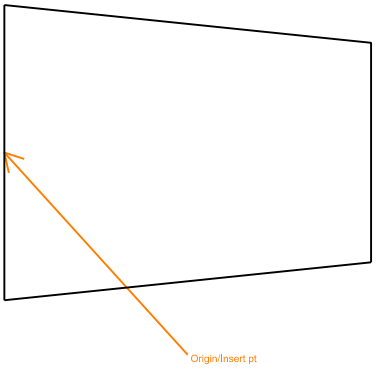
Mechanical: AVENTA
AUTOMATIC AIR VENT
Element type: Symbol



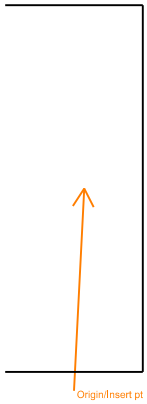
Mechanical: AVENTM
MANUAL AIR VENT
Element type: Symbol



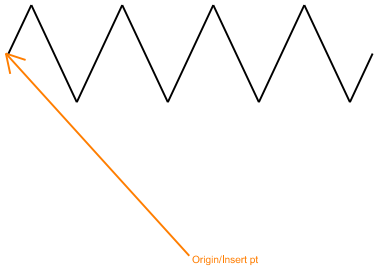
Mechanical: BALLJT
BALL JOINT
Element type: Symbol



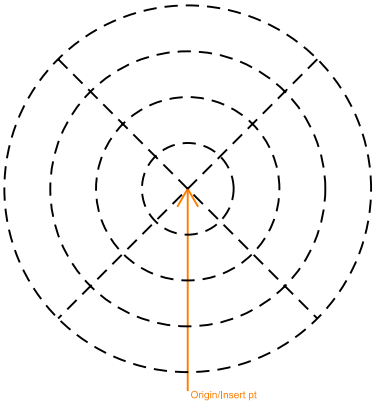
Mechanical: BUSHSC
BUSHING
Element type: Symbol



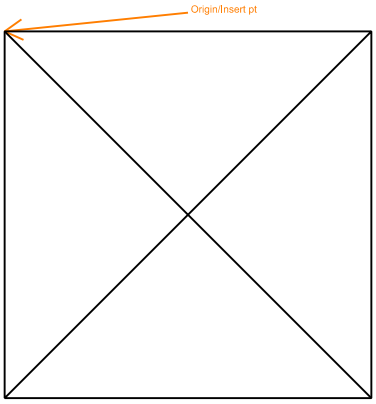
Mechanical: CAPSC
CAP
Element type: Symbol



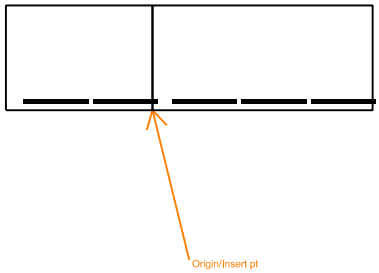
Mechanical: CAPTUB
CAPILLARY TUBE
Element type: Symbol



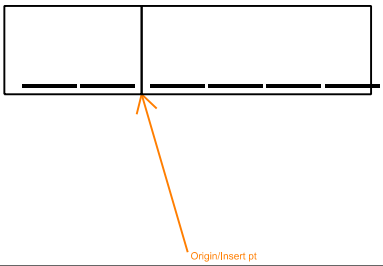
Mechanical: CDRND
ROUND CEILING DIFFUSER
Element type: Symbol



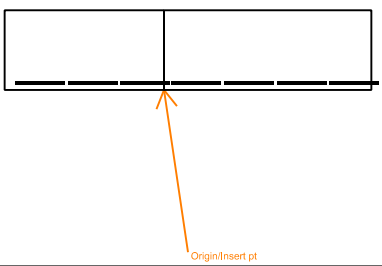
Mechanical: CDSQR
SQUARE CEILING DIFFUSER
Element type: Symbol



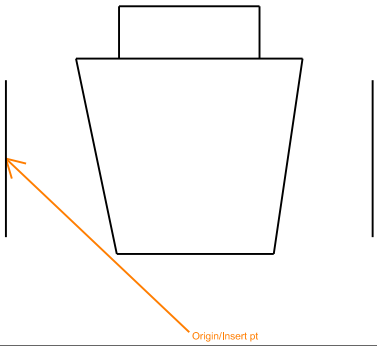
Mechanical: CFM2X3
AIRFLOW CFM
Element type: Symbol



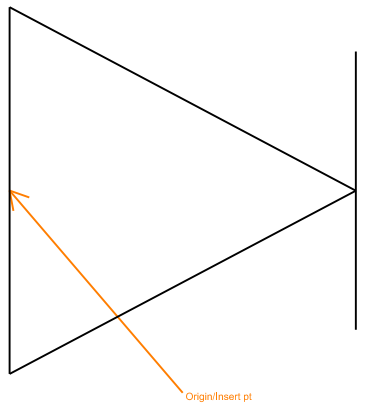
Mechanical: CFM2X4
AIRFLOW CFM
Element type: Symbol



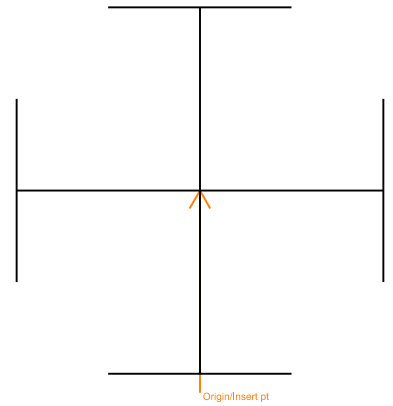
Mechanical: CFM3X4
AIRFLOW CFM
Element type: Symbol



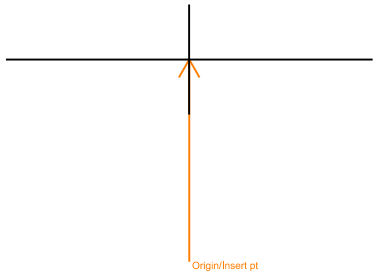
Mechanical: COCKSC
COCK
Element type: Symbol



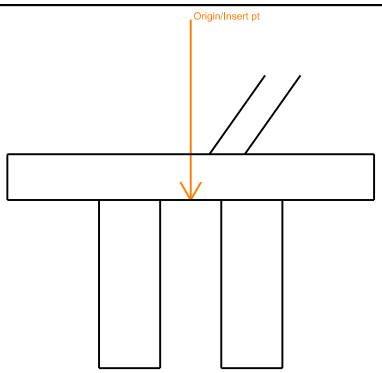
Mechanical: CREDSC
REDUCER CONCENTRIC
Element type: Symbol



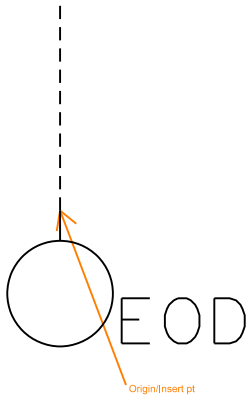
Mechanical: CRSRSC
CROSS
Element type: Symbol



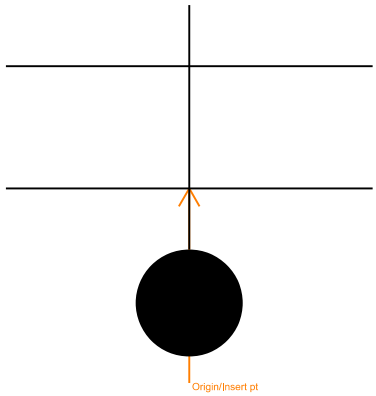
Mechanical: CUPJNT
COUPLING JOINT
Element type: Symbol



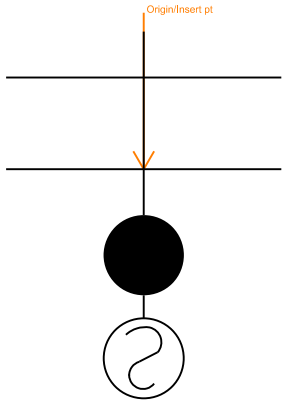
Mechanical: DCTHTR
ELECTRIC DUCT HEATER
Element type: Symbol



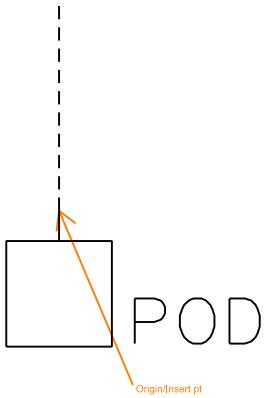
Mechanical: DMPEOC
ELECT OPERATED DAMPER
Element type: Symbol



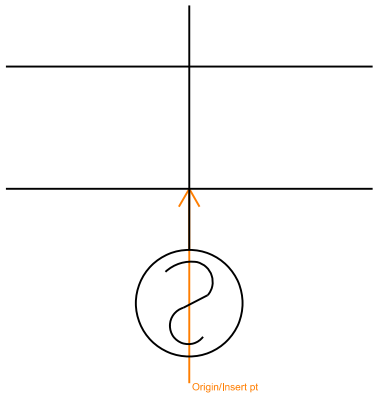
Mechanical: DMPFIR
FIRE DAMPER
Element type: Symbol



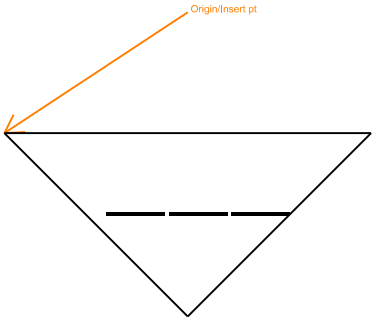
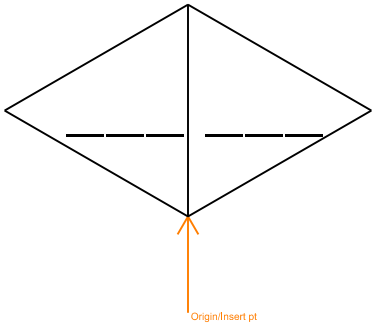
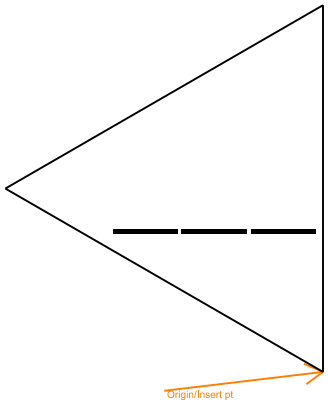
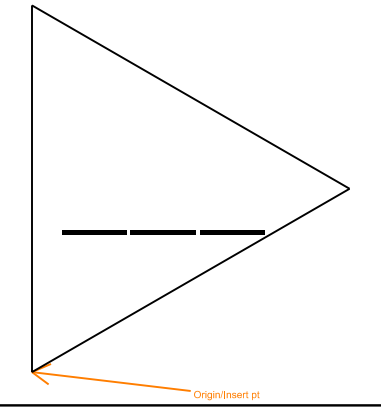
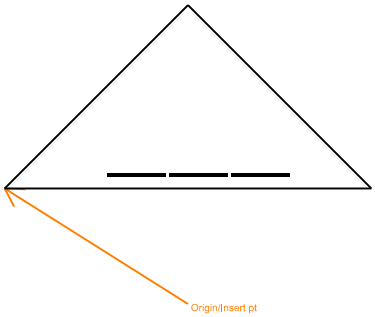
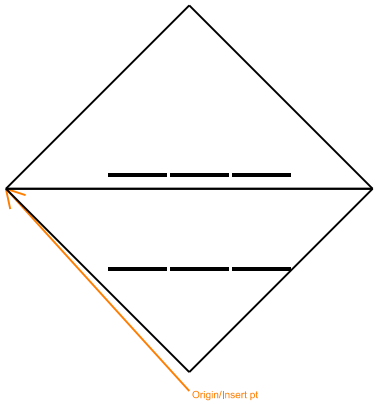
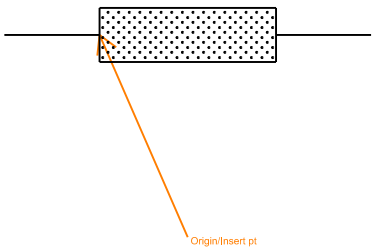
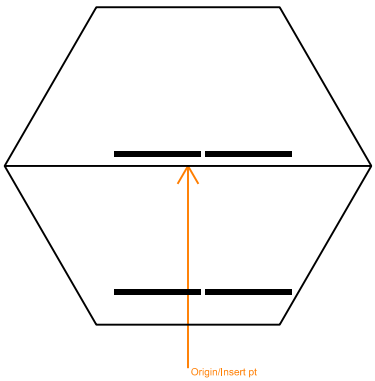
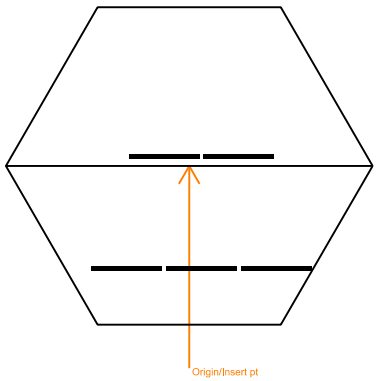
Mechanical: DMPFS
FIRE SMOKE DAMPER
Element type: Symbol

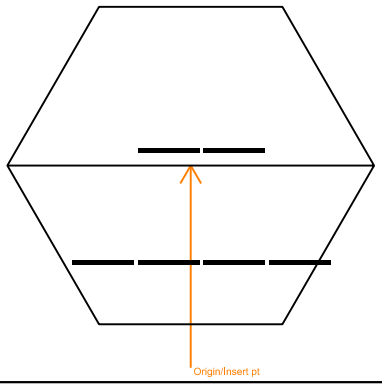


Mechanical: DMPPOD
PNEUMATIC DAMPER
Element type: Symbol

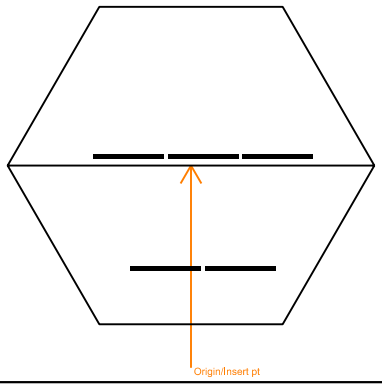


Mechanical: DMPSMK
SMOKE DAMPER
Element type: Symbol

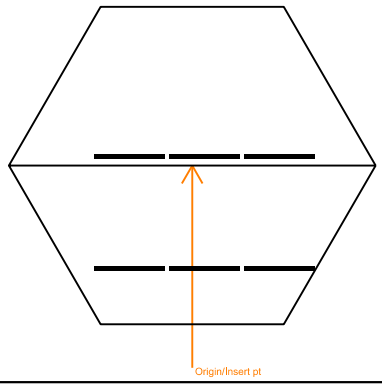
		
Mechanical: DPRSD DUCT PRESSURE CLASS DOWN Element type: Symbol	Mechanical: DPRSH DUCT PRESSURE HORIZONTAL Element type: Symbol	Mechanical: DPRSL DUCT PRESSURE LEFT Element type: Symbol
		
Mechanical: DPRSR DUCT PRESSURE RIGHT Element type: Symbol	Mechanical: DPRSU DUCT PRESSURE CLASS UP Element type: Symbol	Mechanical: DPRSV DUCT PRESSURE CLASS VERT Element type: Symbol
		
Mechanical: DRIER DRIER Element type: Symbol	Mechanical: EEQ2X2 ELEC. EQUIP 2X2 MARK Element type: Symbol	Mechanical: EEQ2X3 ELEC. EQUIP 2X3 MARK Element type: Symbol



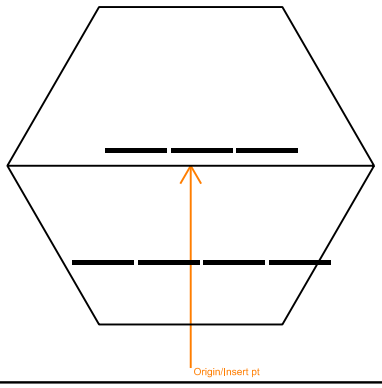
Mechanical: EEQ2X4
ELEC EQUIP 2X4 MARK
Element type: Symbol



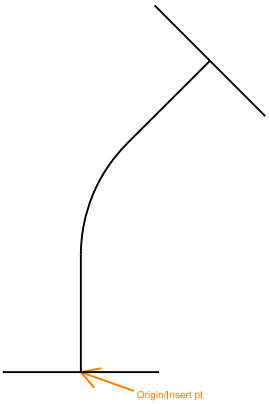
Mechanical: EEQ3X2
ELEC EQUIP 3X2 MARK
Element type: Symbol



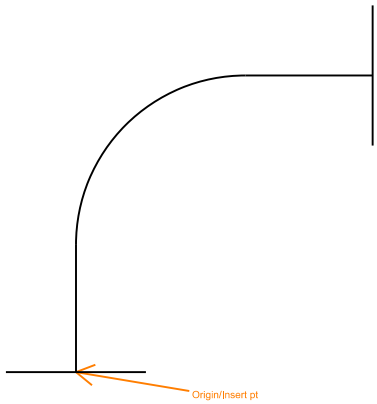
Mechanical: EEQ3X3
ELEC EQUIP 3X3 MARK
Element type: Symbol



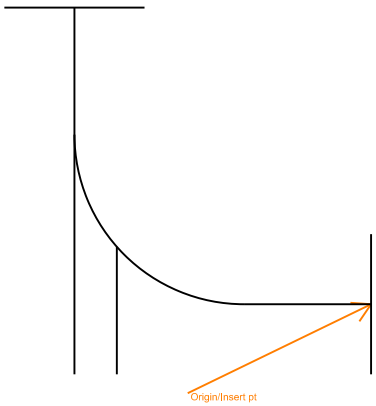
Mechanical: EEQ3X4
ELEC EQUIP 3X4 MARK
Element type: Symbol



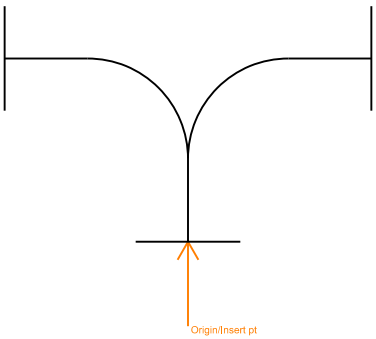
Mechanical: EL45SC
45 DEGREE ELBOW
Element type: Symbol



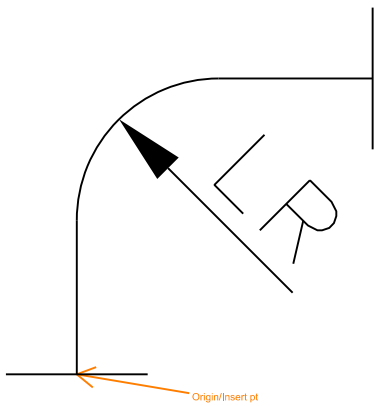
Mechanical: EL90SC
90 DEGREE ELBOW
Element type: Symbol



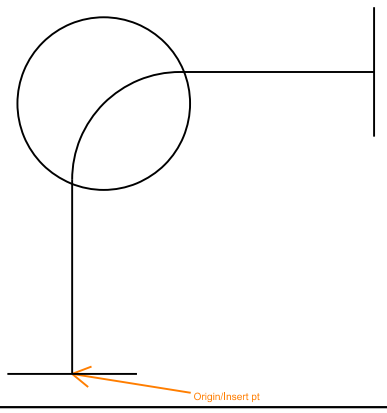
Mechanical: ELBSC
BASE ELBOW
Element type: Symbol



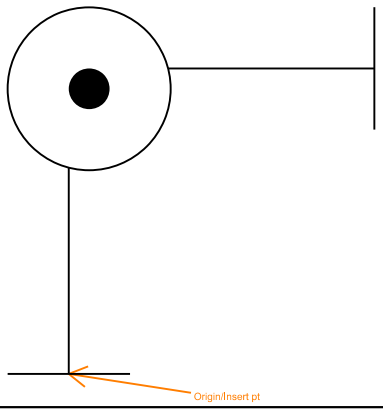
Mechanical: ELDBSC
DOUBLE BRANCH ELBOW
Element type: Symbol



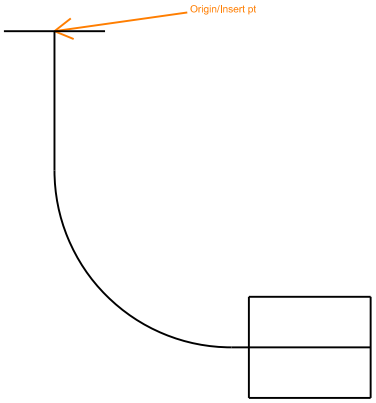
Mechanical: ELLRSC
LONG RADIUS ELBOW
Element type: Symbol



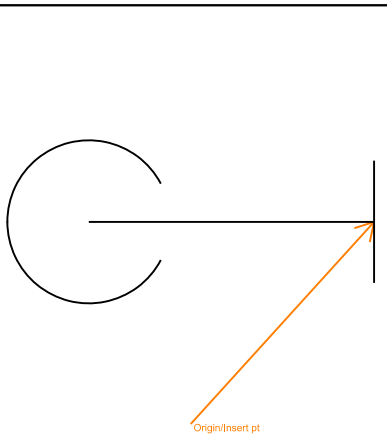
Mechanical: ELODSC
ELBOW SIDE OUTLET DOWN
Element type: Symbol



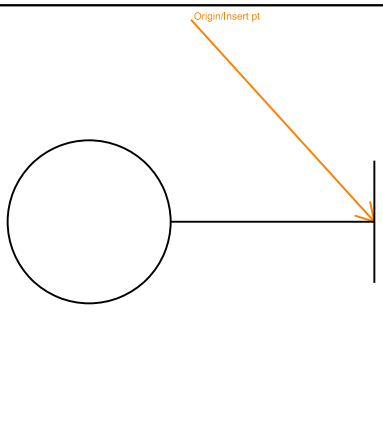
Mechanical: ELOUSC
ELBOW SIDE OUTLET UP
Element type: Symbol



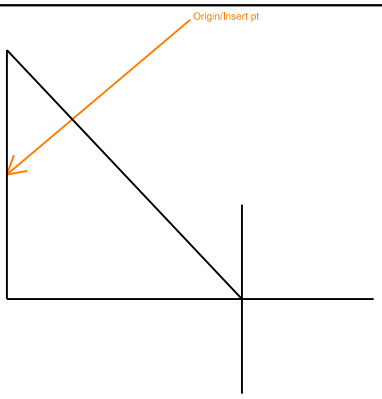
Mechanical: ELSTRT
STREET ELBOW
Element type: Symbol



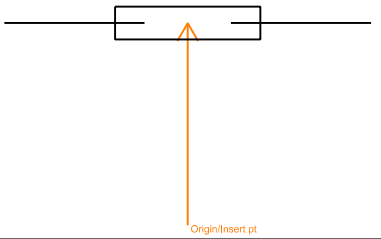
Mechanical: ELTDSC
TURNED DOWN ELBOW
Element type: Symbol



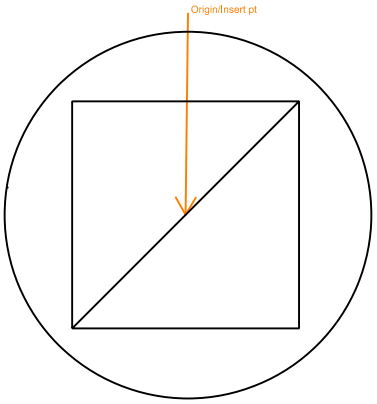
Mechanical: ELTUSC
TURNED UP ELBOW
Element type: Symbol



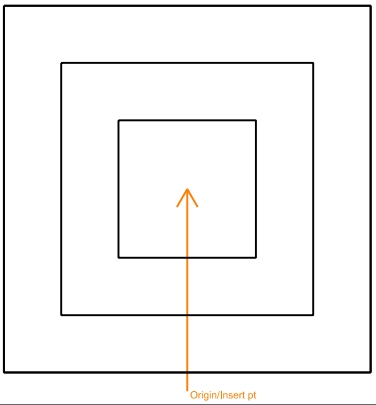
Mechanical: EREDSC
ECCENTRIC REDUCER
Element type: Symbol



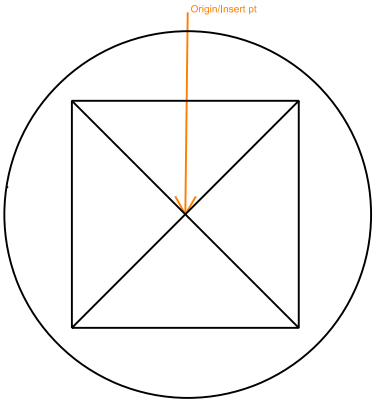
Mechanical: EXPJNT
EXPANSION JOINT
Element type: Symbol



Mechanical: FANERV
EXHAUST ROOF VENT FAN
Element type: Symbol

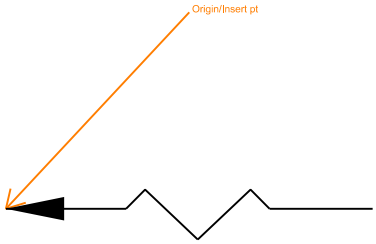


Mechanical: FANLRV
LOUVERED ROOF VENT FAN
Element type: Symbol

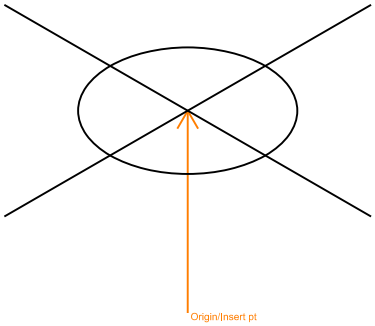


Mechanical: FANSRV
INTAKE ROOF VENT FAN
Element type: Symbol

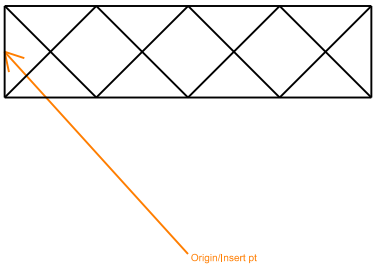
Mechanical: FLBLND
BLIND FLANGE
Element type: Symbol



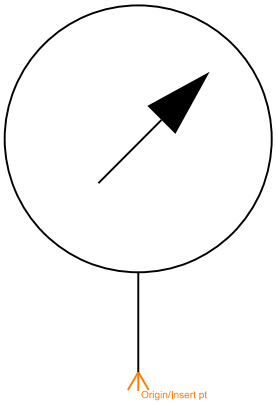
Mechanical: FLOW2
FLOW ARROW
Element type: Symbol



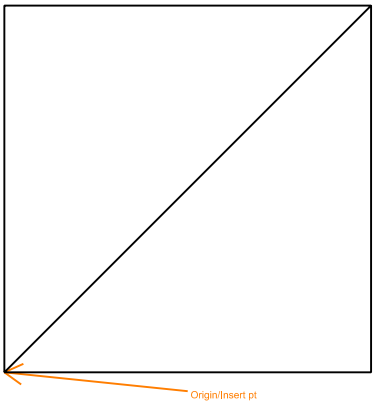
Mechanical: FLRPEN
FLOOR PENETRATION ISO
Element type: Symbol



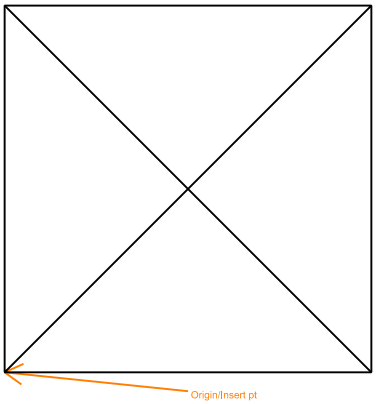
Mechanical: FLXCON
FLEXIBLE CONNECTOR
Element type: Symbol



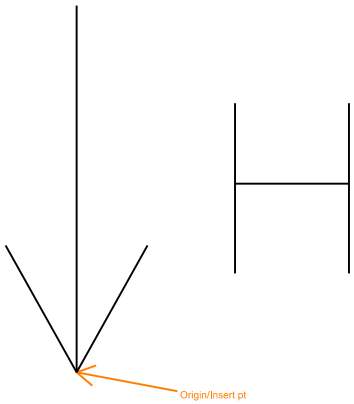
Mechanical: GAUGE
GAUGE
Element type: Symbol



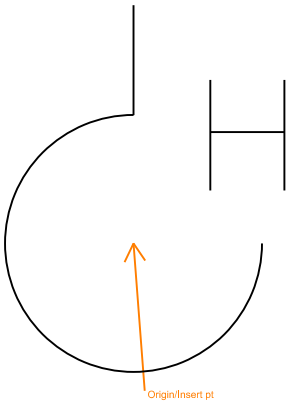
Mechanical: GRILEX
EXHAUST GRILLE
Element type: Symbol



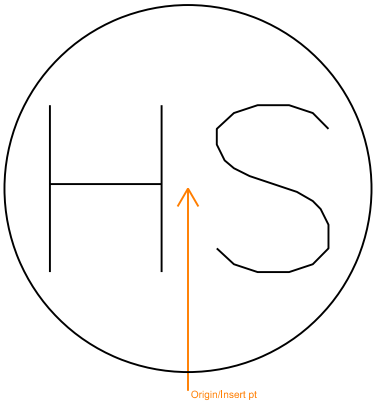
Mechanical: GRILSU
SUPPLY GRILLE
Element type: Symbol



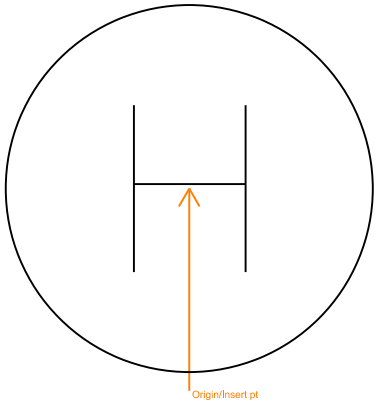
Mechanical: HANGRD
HANGER ROD
Element type: Symbol



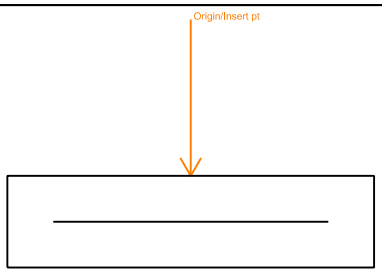
Mechanical: HANGSP
HANGER SPRING
Element type: Symbol



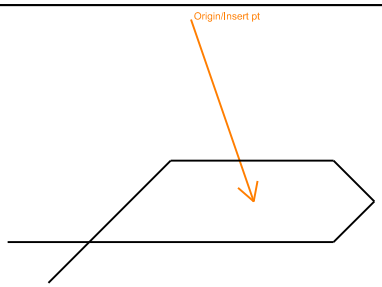
Mechanical: HSENS
HUMIDITY SENSOR
Element type: Symbol



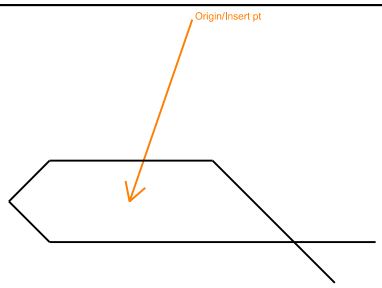
Mechanical: HSTAT
HUMIDISTAT
Element type: Symbol



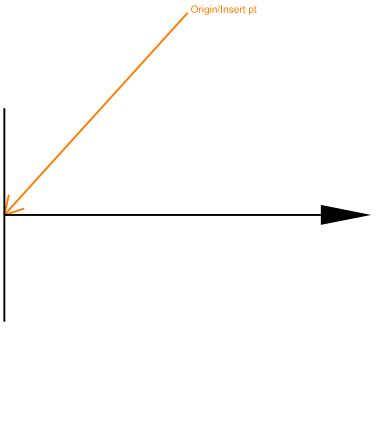
Mechanical: LNDIFF
LINEAR DIFFUSER
Element type: Symbol



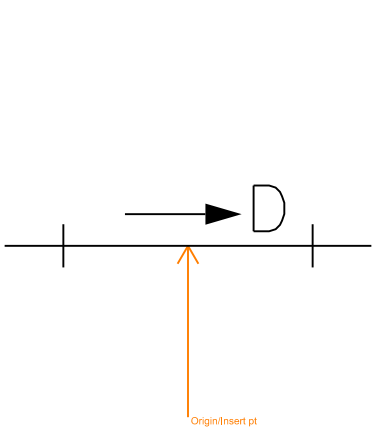
Mechanical: LOOPL
LEFT DIMENSION LOOP
Element type: Symbol



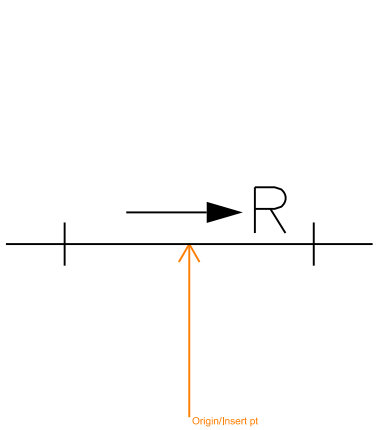
Mechanical: LOOPR
RIGHT DIMENSION LOOP
Element type: Symbol



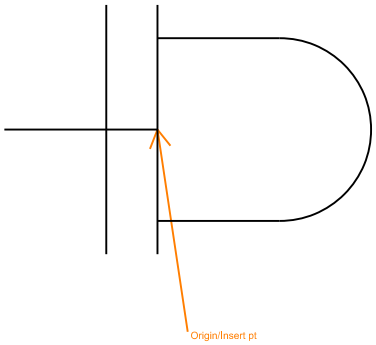
Mechanical: LOUOPN
DOOR OR WALL LOUVER
Element type: Symbol



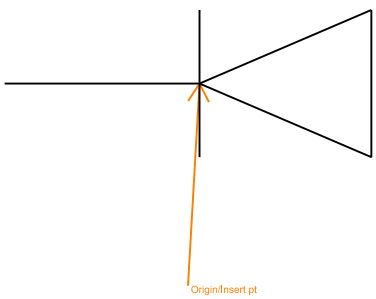
Mechanical: PIDROP
PITCH OR PIPE DROP
Element type: Symbol



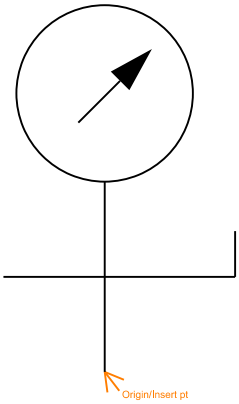
Mechanical: PIRISE
PITCH OR PIPE RISE
Element type: Symbol



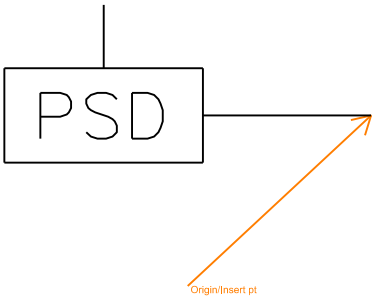
Mechanical: PLGBFL
BULL PLUG FLANGED
Element type: Symbol



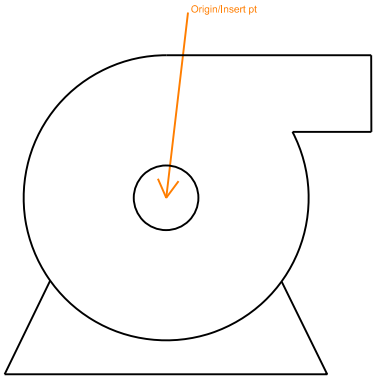
Mechanical: PLGPSC
PIPE PLUG
Element type: Symbol



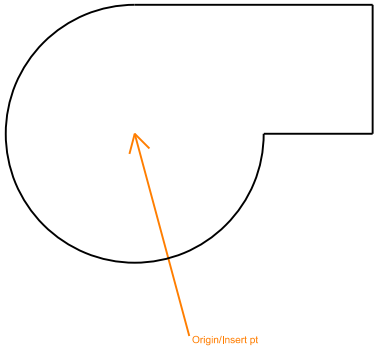
Mechanical: PRGGCO
PRESSURE GAGE AND COCK
Element type: Symbol



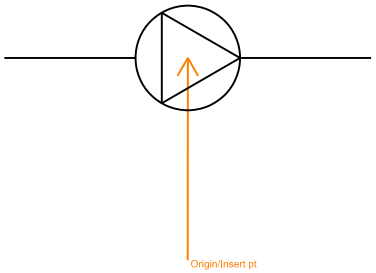
Mechanical: PSDIFF
PUMP SUCTION DIFFUSER
Element type: Symbol



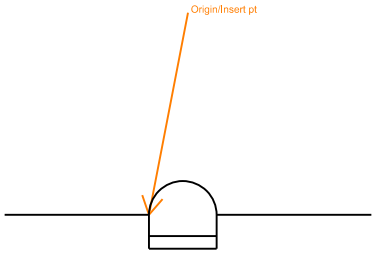
Mechanical: PUMP
PUMP
Element type: Symbol



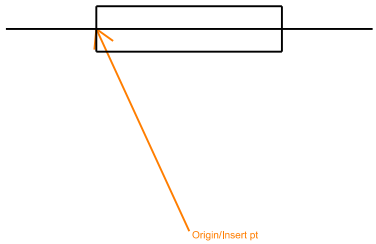
Mechanical: PUMPP
PUMP SCHEMATIC
Element type: Symbol



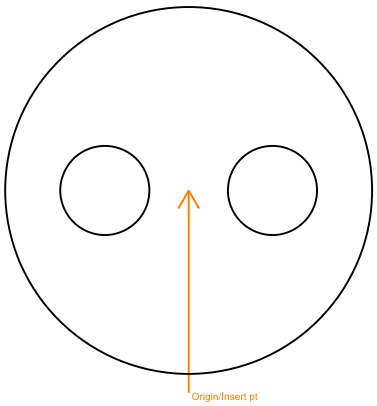
Mechanical: PUMPS
INLINE PUMP
Element type: Symbol



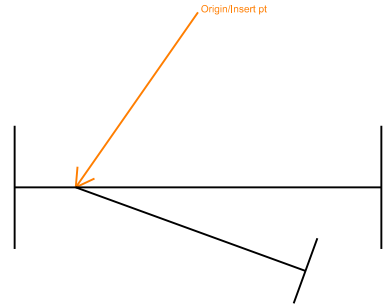
Mechanical: SCALET
SCALE TRAP
Element type: Symbol



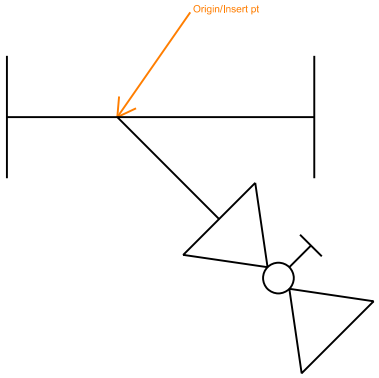
Mechanical: SLEEVE
SLEEVE
Element type: Symbol



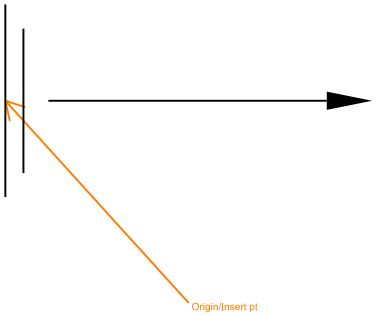
Mechanical: STGLAS
SIGHT GLASS
Element type: Symbol



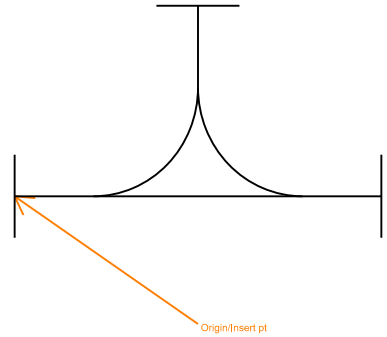
Mechanical: STRAIN
STRAINER
Element type: Symbol



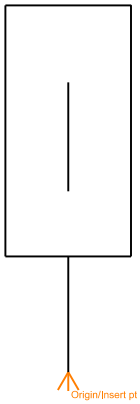
Mechanical: STRBLO
BLOW OFF STRAINER
Element type: Symbol



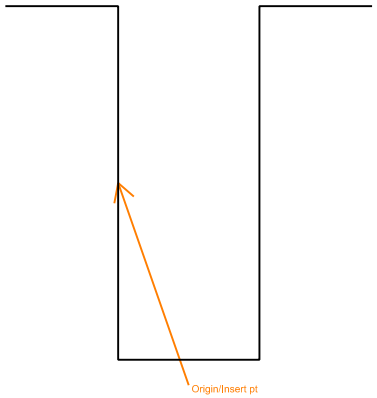
Mechanical: SUPOUT
SUPPLY OUTLET WALL SUPPLY
Element type: Symbol



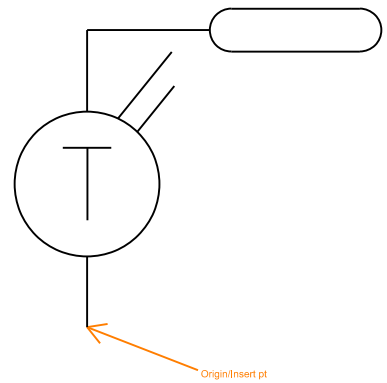
Mechanical: TDSSC
DOUBLE SWEEP TEE
Element type: Symbol



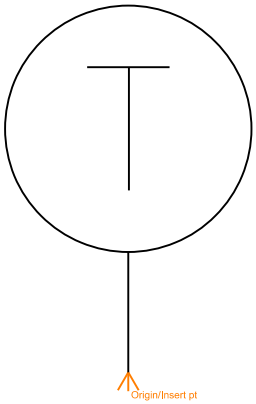
Mechanical: THERM
THERMOMETER
Element type: Symbol



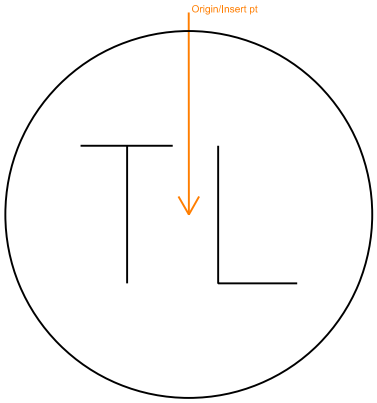
Mechanical: THERMW
THERMOMETER WELL
Element type: Symbol



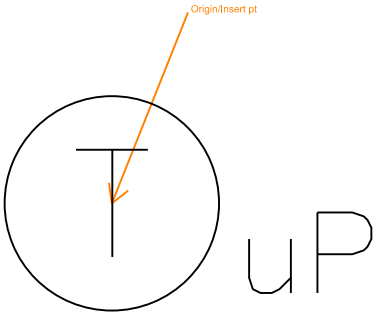
Mechanical: THHRB
THERMOSTAT REMOTE BULB
Element type: Symbol



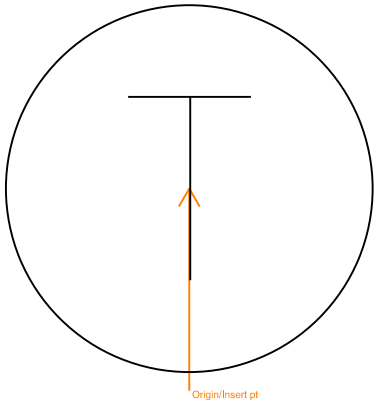
Mechanical: THHSC
THERMOSTAT SELFCONTAINED
Element type: Symbol



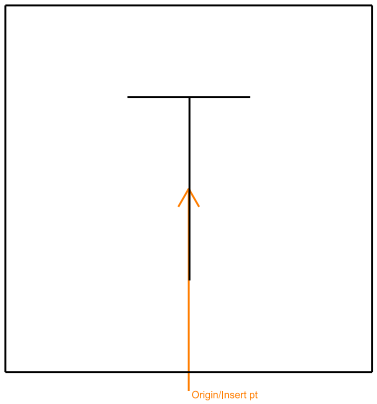
Mechanical: THLPRS
THERMOSTAT LOW PRESSURE
Element type: Symbol



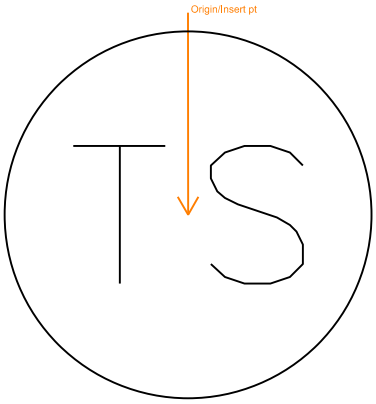
Mechanical: THMCP
MICROPROCESSOR THERMOSTAT
Element type: Symbol



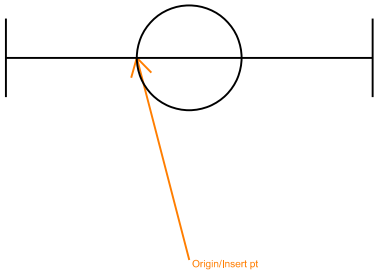
Mechanical: THPELE
THERMOSTAT ELECTRIC
Element type: Symbol



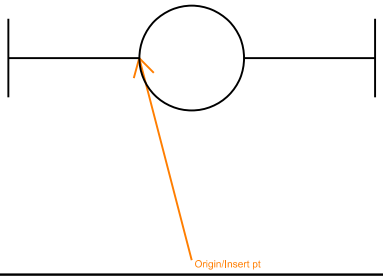
Mechanical: THPPNE
THERMOSTAT PNEUMATIC PIPE
Element type: Symbol



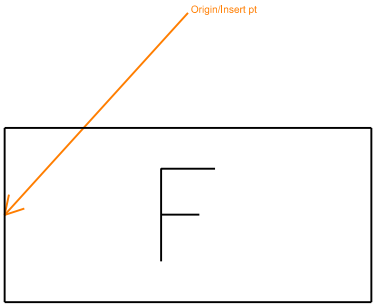
Mechanical: TMPSEN
TEMPERATURE SENSOR
Element type: Symbol



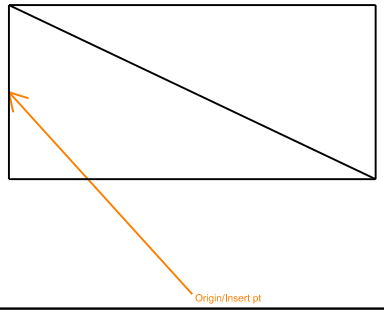
Mechanical: TODSC
TEE OUTLET DOWN
Element type: Symbol



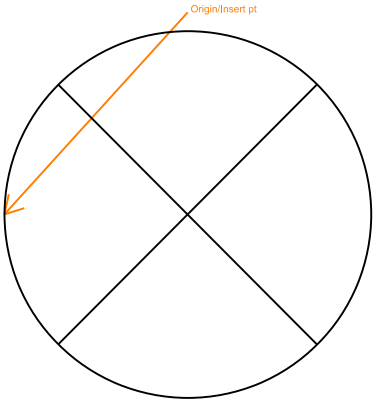
Mechanical: TOUSC
TEE OUTLET UP
Element type: Symbol



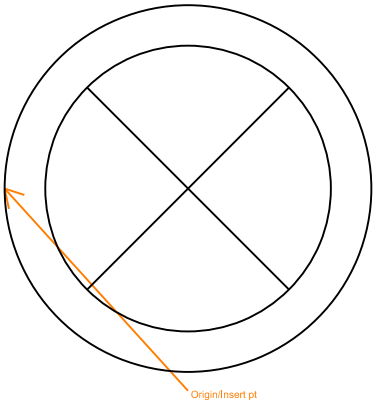
Mechanical: TRAPFL
FLOAT TRAP
Element type: Symbol



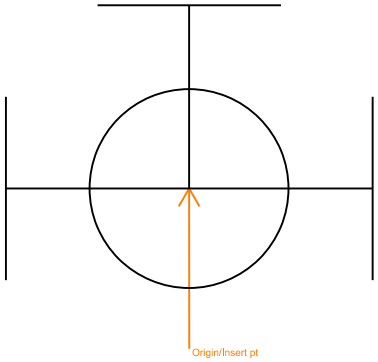
Mechanical: TRAPFT
FLOAT THERMOSTATIC TRAP
Element type: Symbol



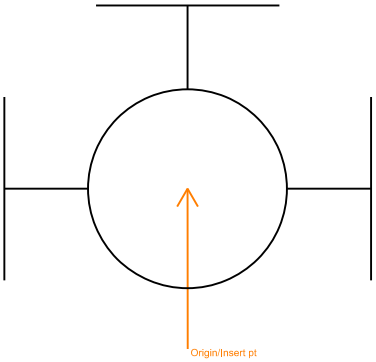
Mechanical: TRAPST
STEAM TRAP
Element type: Symbol



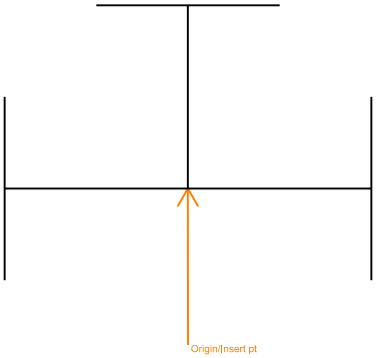
Mechanical: TRAPTB
THERMOSTATIC BLAST TRAP
Element type: Symbol



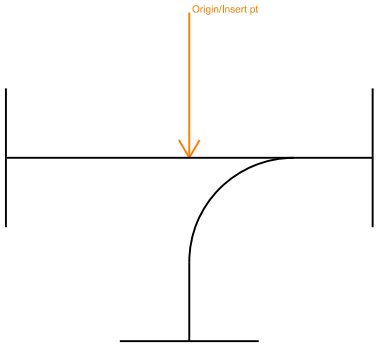
Mechanical: TSODSC
TEE SIDE OUTLET DOWN
Element type: Symbol



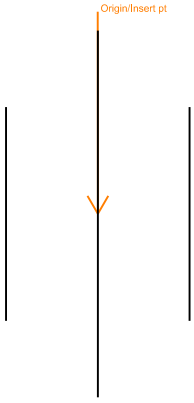
Mechanical: TSOUSC
TEE SIDE OUTLET UP
Element type: Symbol



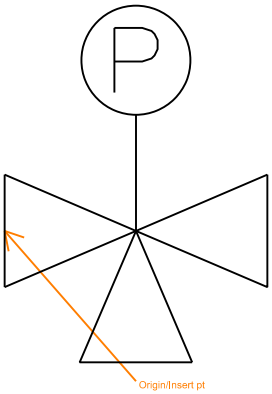
Mechanical: TSSSC
TEE
Element type: Symbol



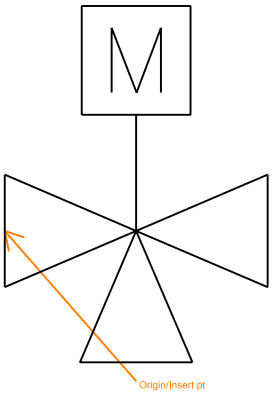
Mechanical: TSSWSC
SINGLE SWEEP TEE
Element type: Symbol



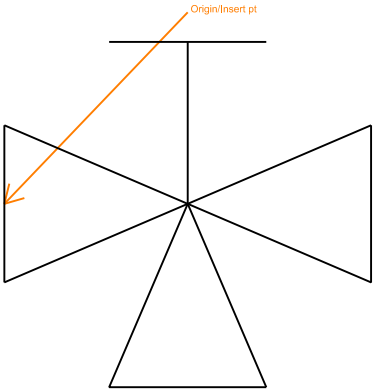
Mechanical: UNIOSC
UNION
Element type: Symbol



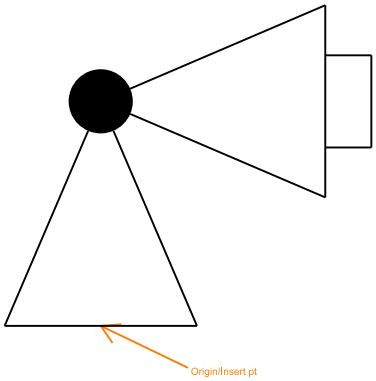
Mechanical: VA3WAM
3WAY AIRMOTOR CONTROLER
Element type: Symbol



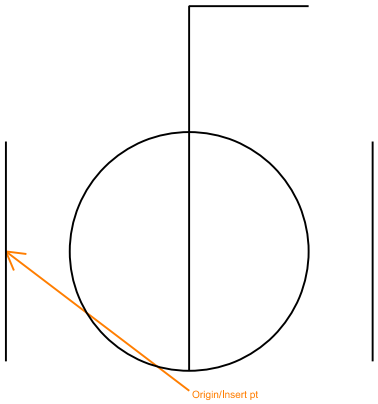
Mechanical: VA3WEM
3WAY ELECMOTOR CONTRLE
Element type: Symbol



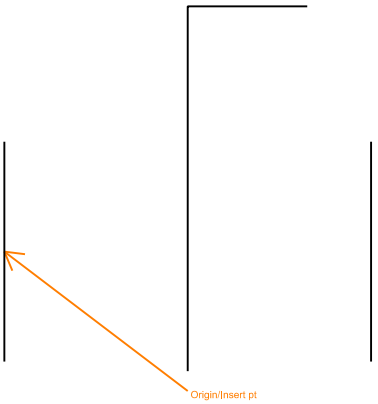
Mechanical: VA3WM
3 WAY MANUAL VALVE
Element type: Symbol



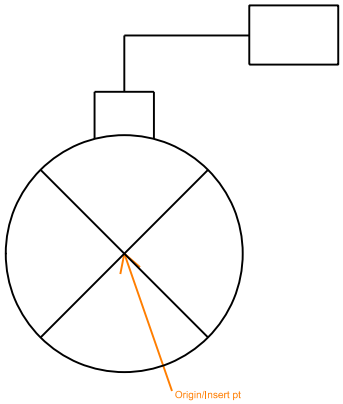
Mechanical: VAAHOS
ANGLE HOSE VALVE
Element type: Symbol



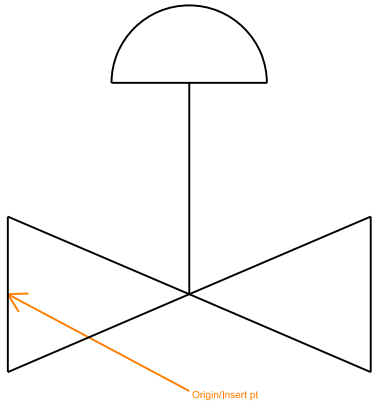
Mechanical: VABALL
BALL VALVE PLAN
Element type: Symbol



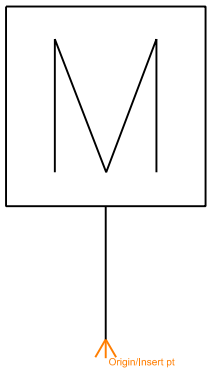
Mechanical: VABFLY
BUTTERFLY VALVE
Element type: Symbol



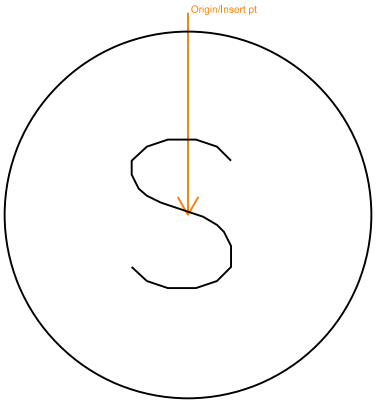
Mechanical: VACWR
CONDENSWATER REGULATVALVE
Element type: Symbol



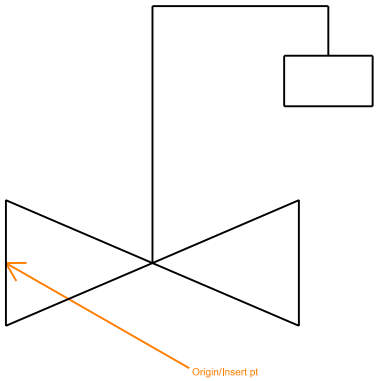
Mechanical: VADISC
DIAPHRAGM VALVE
Element type: Symbol



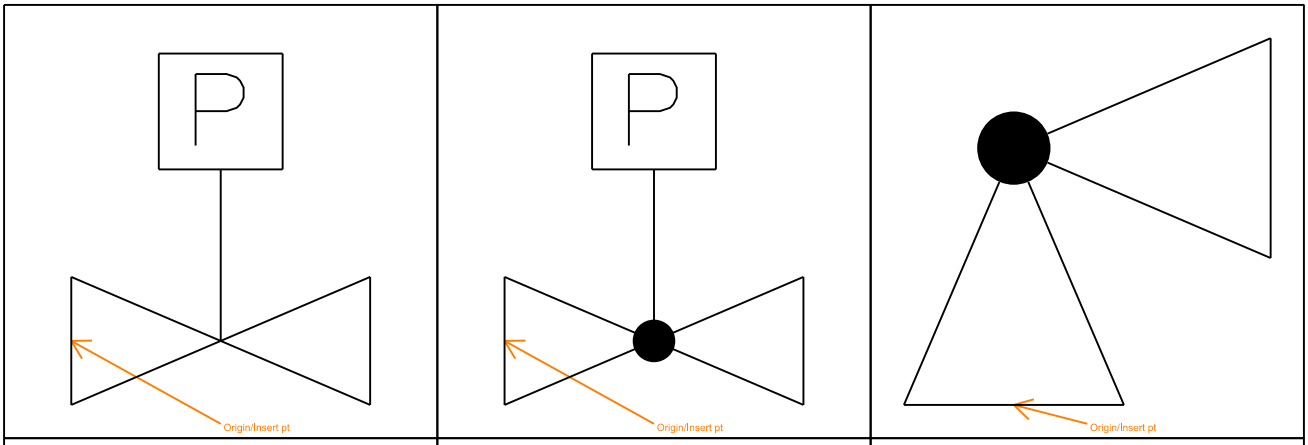
Mechanical: VAEMTR
PNEUMATIC MOTOR
Element type: Symbol



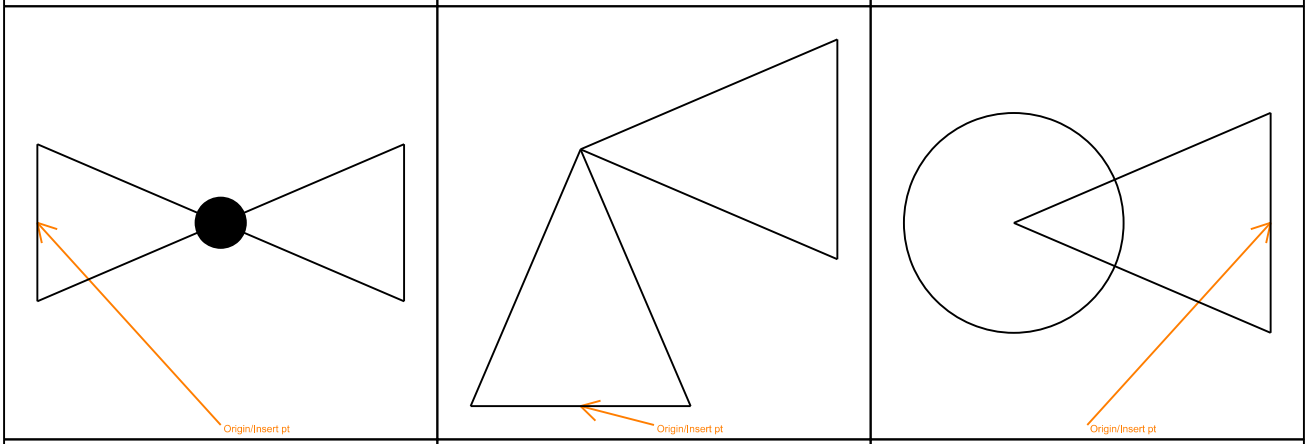
Mechanical: VAESOL
SOLENOID VALVE ACTUATOR
Element type: Symbol



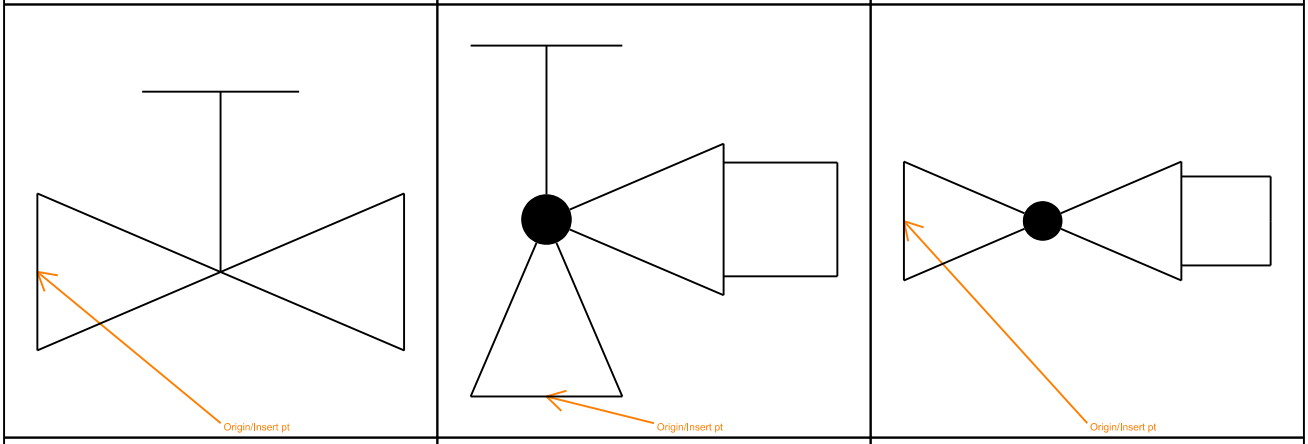
Mechanical: VAFLSC
FLOAT VALVE
Element type: Symbol



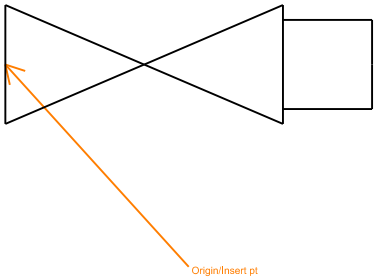
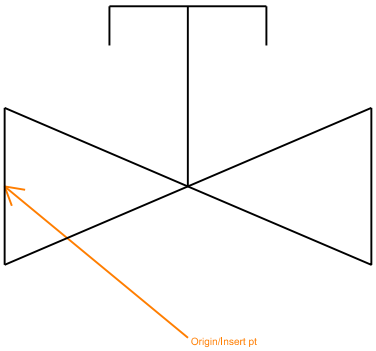
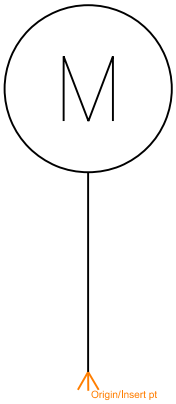
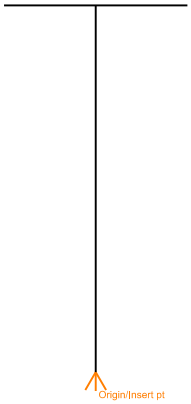
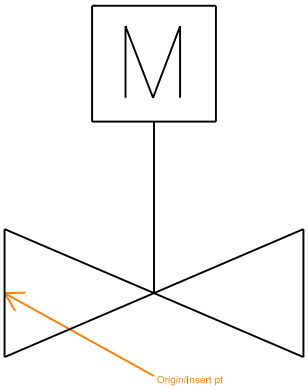
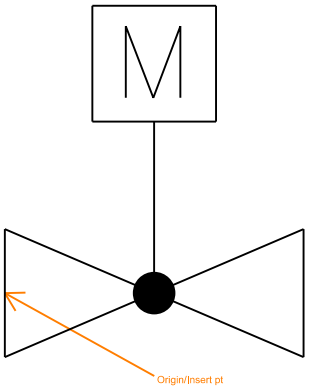
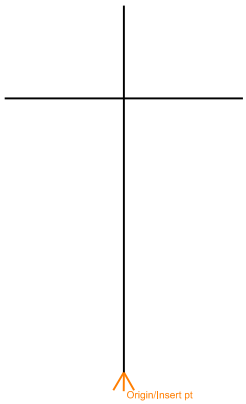
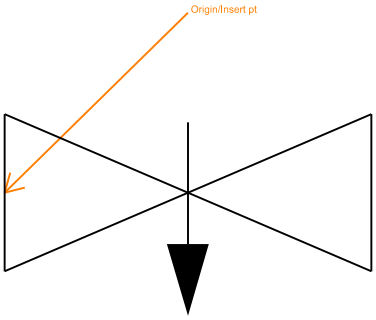
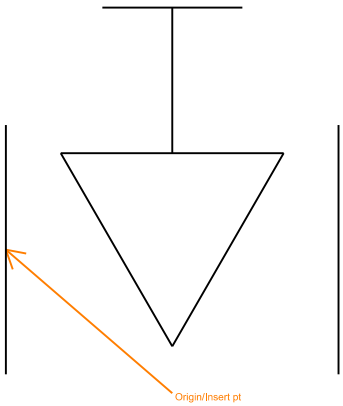
Mechanical: VAGAMC PNEUMATIC CTRLD GATE VALVE Element type: Symbol	Mechanical: VAGLAM PNEUMATIC CTRLD GLOBE VLV Element type: Symbol	Mechanical: VAGLE ANGLE GLOBE VALVE Element type: Symbol

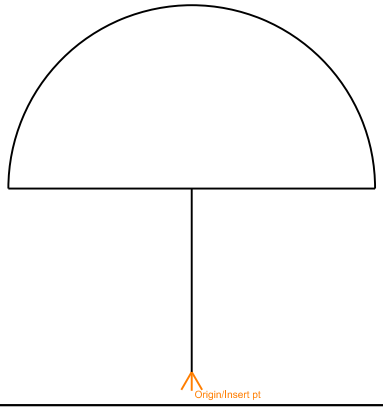


Mechanical: VAGLSE GLOBE VALVE Element type: Symbol	Mechanical: VAGSE ANGLE GATE VALVE Element type: Symbol	Mechanical: VAGSP ANGLE GATE VALVE PLAN Element type: Symbol

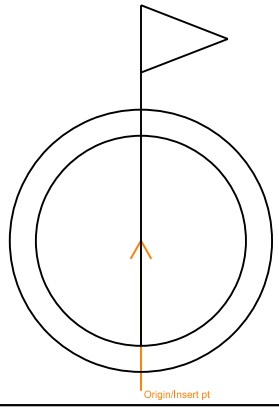


Mechanical: VAGTSE GATE VALVE Element type: Symbol	Mechanical: VAHASC GATE VALVE PLAN Element type: Symbol	Mechanical: VAHGLS HOSE GLOBE VALVE Element type: Symbol

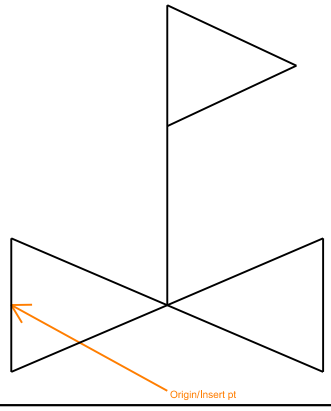
		
Mechanical: VAHGSC HOSE GATE VALVE Element type: Symbol	Mechanical: VALSSC LOCK SHIELD VALVE Element type: Symbol	Mechanical: VAMAGS MAGNETIC STOP VALVE Element type: Symbol
		
Mechanical: VAMNNS VLV ACTUA MAN NONRISINGSTEM Element type: Symbol	Mechanical: VAMOGS MOTOR OPERATD GATE VALVE Element type: Symbol	Mechanical: VAMOLS MOTOR OPERATD GLOBE VALVE Element type: Symbol
		
Mechanical: VAMOSY VLV ACTTOR MAN OUTSTEM Element type: Symbol	Mechanical: VANEED NEEDLE VALVE Element type: Symbol	Mechanical: VAPLUG PLUG VALVE Element type: Symbol



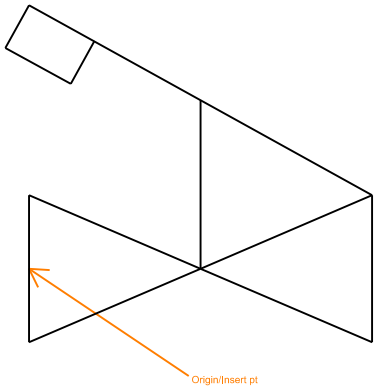
Mechanical: VAPMTD
VALVE ACTUATOR PNEUMOT
Element type: Symbol



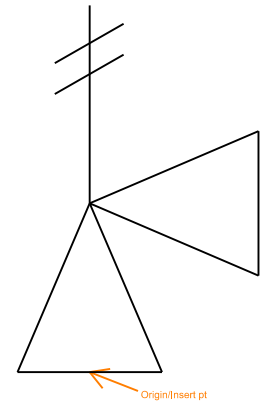
Mechanical: VAPRED
PRESSURE REDUCING VALVE
Element type: Symbol



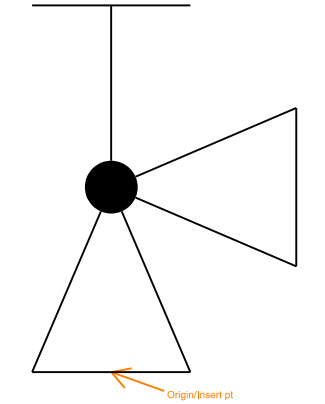
Mechanical: VAPRRD
PRESSURE REDUCING VALVE
Element type: Symbol



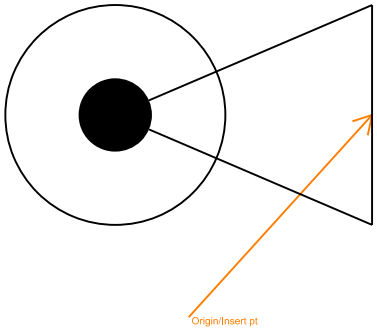
Mechanical: VAQOSC
QUICK OPENING VALVE
Element type: Symbol



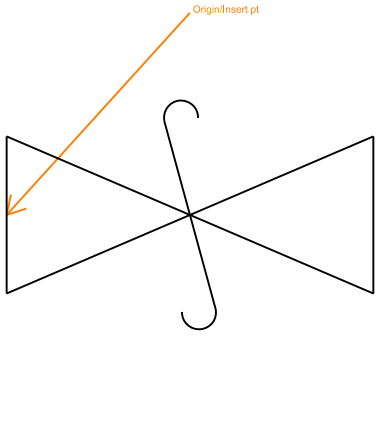
Mechanical: VARELF
RELIEF OR SAFETY VALVE
Element type: Symbol



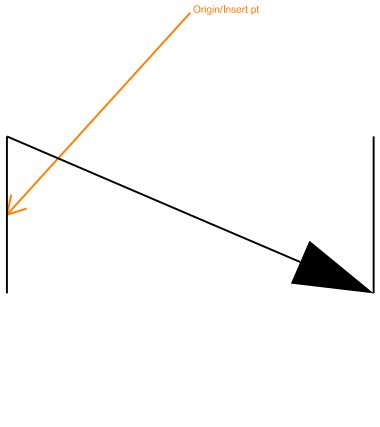
Mechanical: VASCE
ANGLE GLOBE VALVE
Element type: Symbol



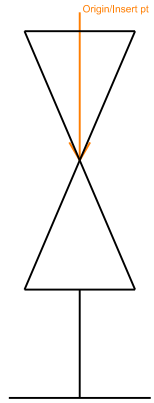
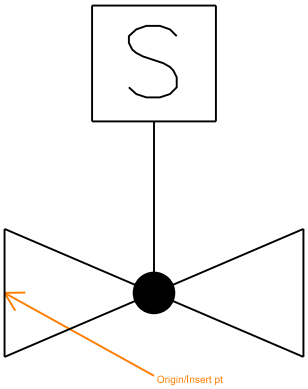
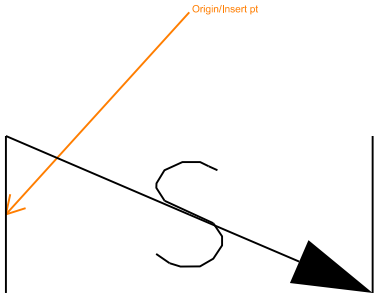
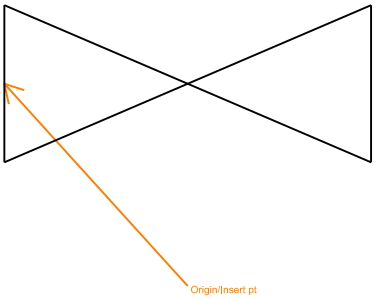
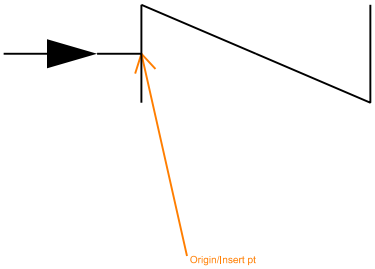
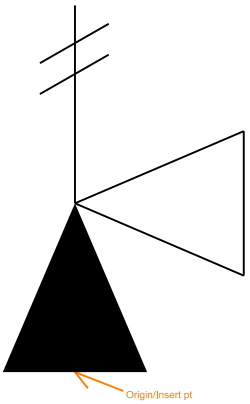
Mechanical: VASCP
ANGLE GLOBE VALVE PLAN
Element type: Symbol



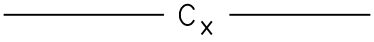
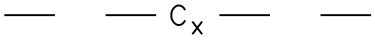
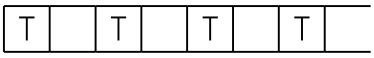
Mechanical: VASFSC
SAFETY VALVE
Element type: Symbol

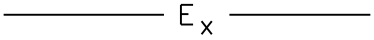
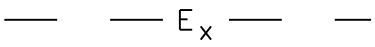
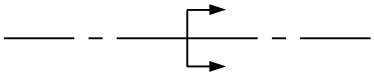


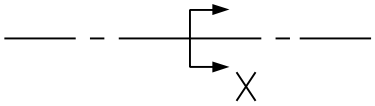
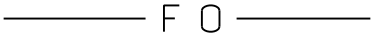
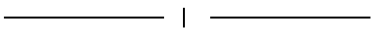
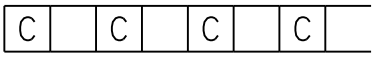
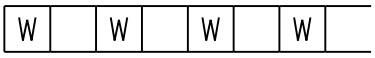
Mechanical: VASGCH
SWING GATE CHECK VALVE
Element type: Symbol

		
Mechanical: VASNAP SNAP ACTION VALVE Element type: Symbol	Mechanical: VASOLN SOLENOID VALVE Element type: Symbol	Mechanical: VASPCH SPRING CHECK VALVE Element type: Symbol
		
Mechanical: VASTSC GATE VALVE Element type: Symbol	Mechanical: VASWSC STRAIGHT WAY CHECK VALVE Element type: Symbol	Mechanical: VATPR TEMP PRESSURE RELIEF VALVE Element type: Symbol

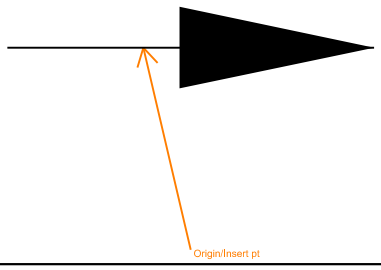
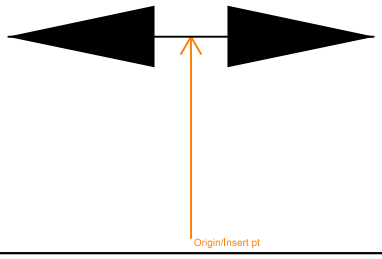
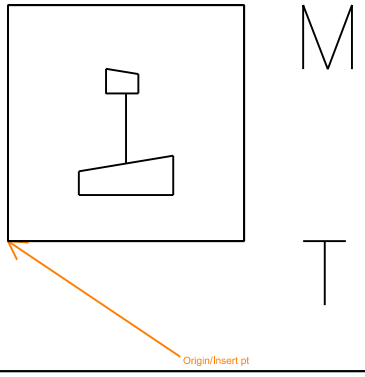
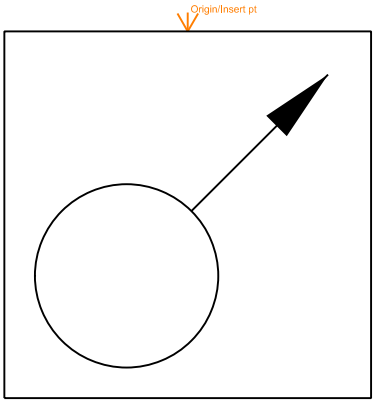
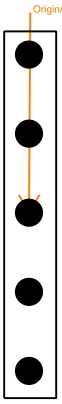
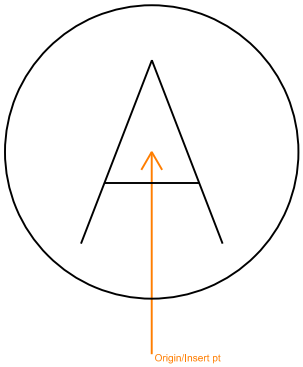
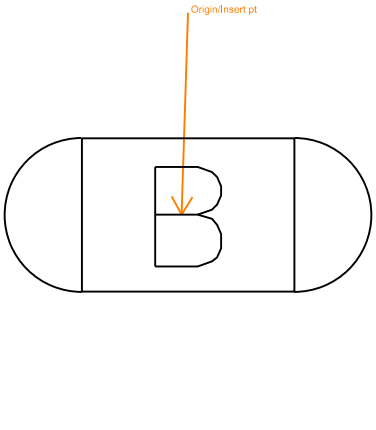
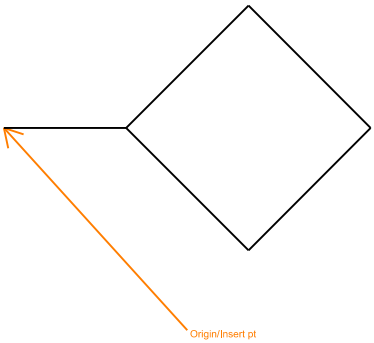
13 Electrical Lines Library

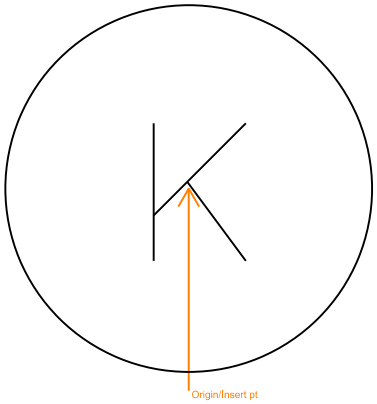
Electrical: BUSWAY BUSWAY Element type: Line	Electrical: CABLTV CABLE TV Element type: Line	Electrical: CCTV CLOSED CIRCUIT TV Element type: Line
		
Electrical: COMARN NEW COMMUNCATION AERIAL Element type: Line	Electrical: COMARX EXIST COMMUNCATION AERIAL Element type: Line	Electrical: COMUGN NEW COMMUNCATION UNDERG Element type: Line
		
Electrical: COMUGX EXIST COMMUNCATION UNDERG Element type: Line	Electrical: CONDFL FLEXIBLE CONDUIT Element type: Line	Electrical: DUCTTR TROLLEY DUCT Element type: Line

		
Electrical: EPARN NEW ELEC AERIAL PRIMARY Element type: Line	Electrical: EPARX EXIST ELEC AERIAL PRIMARY Element type: Line	Electrical: EPUGN NEW ELEC UNDERG PRIMARY Element type: Line
		
Electrical: EPUGX EXIST ELEC UNDERG PRIMARY Element type: Line	Electrical: ESARN NEW ELEC AERIAL SEC Element type: Line	Electrical: ESARX EXIST ELEC AERIAL SEC Element type: Line
		
Electrical: ESUGN NEW ELEC UNDERG SEC Element type: Line	Electrical: ESUGX EXIST ELEC UNDERG SEC Element type: Line	Electrical: EUDUCN NEW UNDERGROUND DUCT BANK Element type: Line

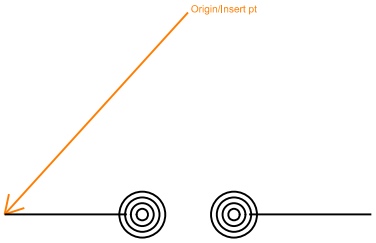
		
Electrical: EUDUCX EXIST UNDERGROUND DUCT BANK Element type: Line	Electrical: FIBOPT FIBER OPTICS LINE Element type: Line	Electrical: INTCOM INTERCOM Element type: Line
		
Electrical: LADDER CABLE LADDER Element type: Line	Electrical: NURSE NURSE CALL Element type: Line	Electrical: PHONE TELEPHONE Element type: Line
		
Electrical: WIREWY WIREWAY Element type: Line		

13 Electrical Symbols Library

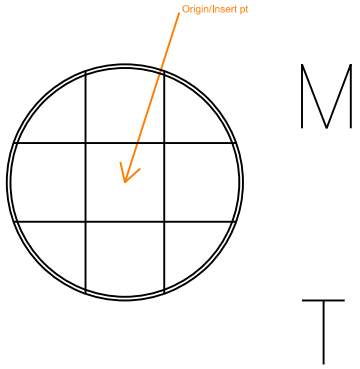
		
Electrical: 1DIR DIRECTION ARROW Element type: Symbol	Electrical: 2DIR DOUBLE DIRECTION ARROW Element type: Symbol	Electrical: 2WAYMC 2-WAY RADIO MICROPHONE Element type: Symbol
		
Electrical: ACCBIO BIOMETRIC ACCESS CONTROL Element type: Symbol	Electrical: ACLLEL APPROACH LIGHTBAR_ELEVATED Element type: Symbol	Electrical: ACLLSF APPROACH LIGHTBAR_SEMIFLUSH Element type: Symbol
		
Electrical: AERROD AERIAL ROD Element type: Symbol	Electrical: AFBCN AIRFIELD BEACON Element type: Symbol	Electrical: ANNUN ANNUNCIATOR Element type: Symbol



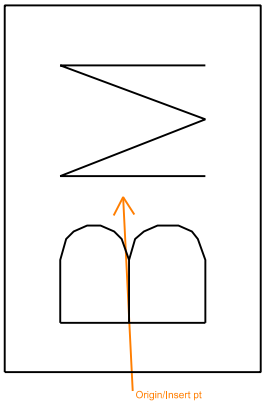
Electrical: ANNUNT
LOCAL CNTRL ANNUNCIATON UNT
Element type: Symbol



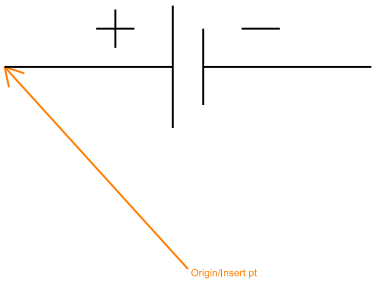
Electrical: ARREST
LIGHTNING ARRESTOR
Element type: Symbol



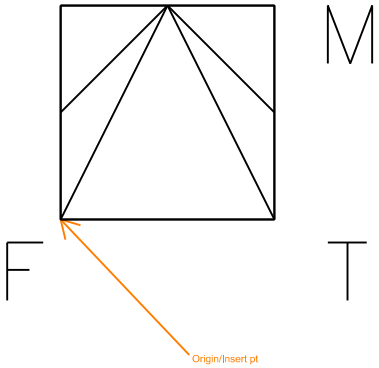
Electrical: AUDIO
AUDIO
Element type: Symbol



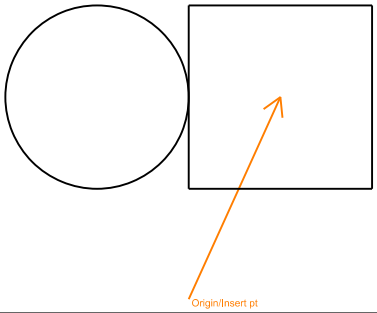
Electrical: BARMKR
BARRIER MARKER
Element type: Symbol



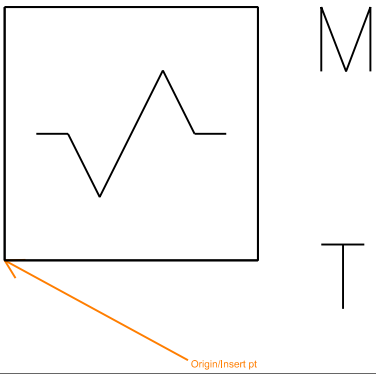
Electrical: BATTRY
BATTERY
Element type: Symbol



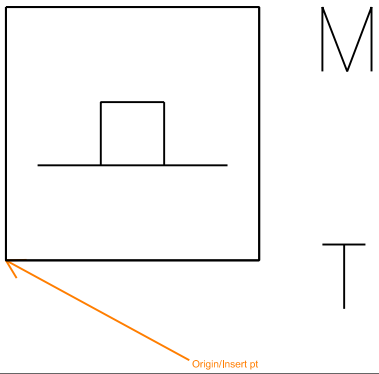
Electrical: BEAM
BI-STATIC BEAM SENSOR
Element type: Symbol



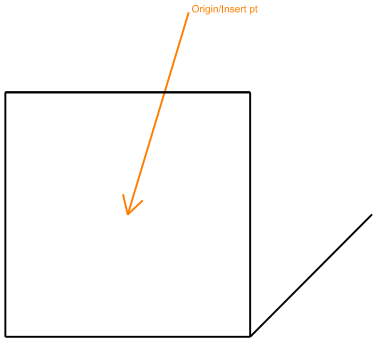
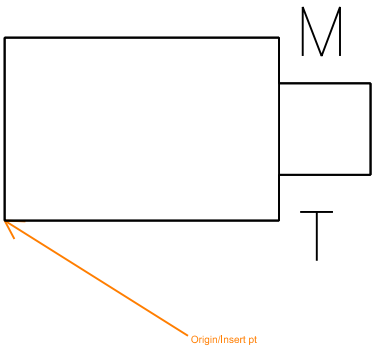
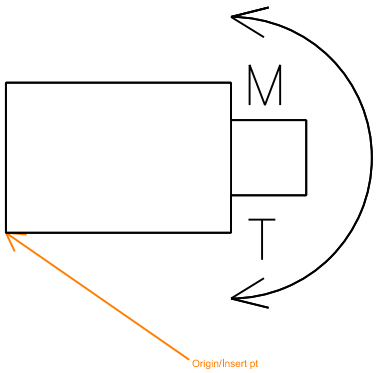
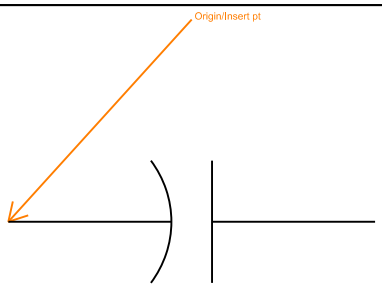
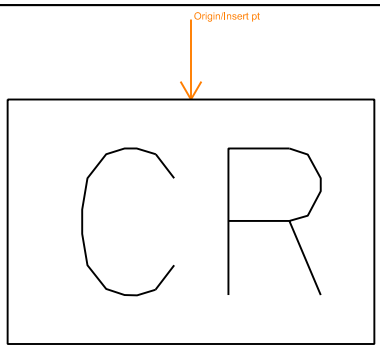
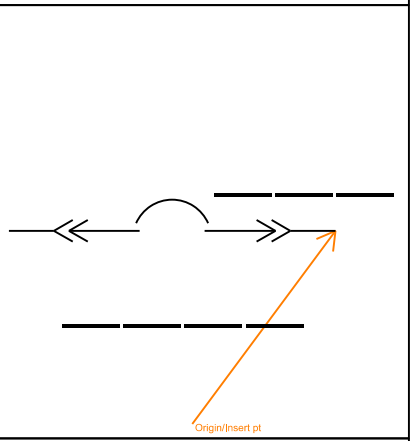
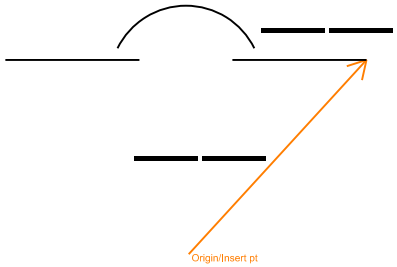
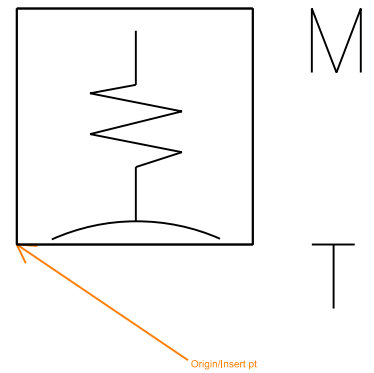
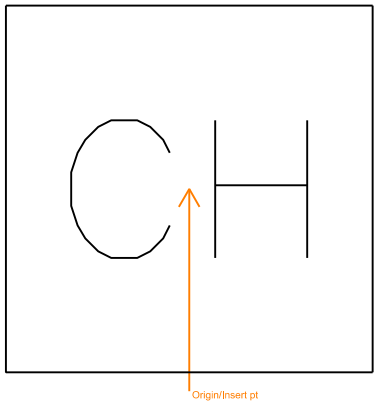
Electrical: BELL
BELL
Element type: Symbol

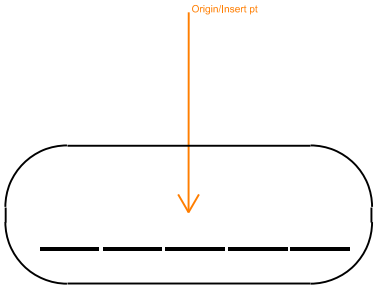


Electrical: BIORDR
BIOMETRICS ACCESS CONTROL DEVICE
Element type: Symbol

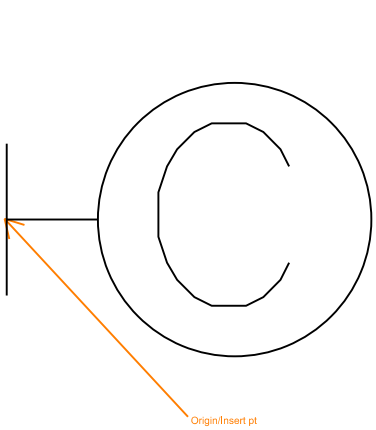


Electrical: BUTTON
BUTTON
Element type: Symbol

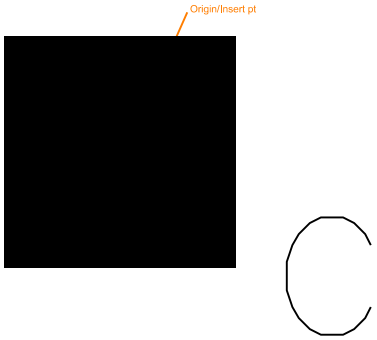
		
Electrical: BUZZER BUZZER Element type: Symbol	Electrical: CAMFXD CAMERA Element type: Symbol	Electrical: CAMPTZ CAMERA WITH PAN/TILE/ZOOM Element type: Symbol
		
Electrical: CAPCTR CAPACITOR Element type: Symbol	Electrical: CARDRD CARD READER Element type: Symbol	Electrical: CBDOUT DRAWOUT CIRCUIT BREAKER Element type: Symbol
		
Electrical: CBMCAS MOLDED CASE CKT BREAKER Element type: Symbol	Electrical: CELLTX CELLULAR TRANSMITTER Element type: Symbol	Electrical: CHIME CHIME Element type: Symbol



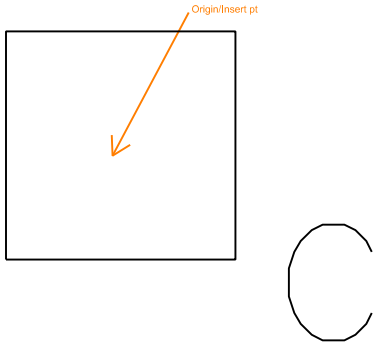
Electrical: CKTID
CIRCUIT ID SYMBOL
Element type: Symbol



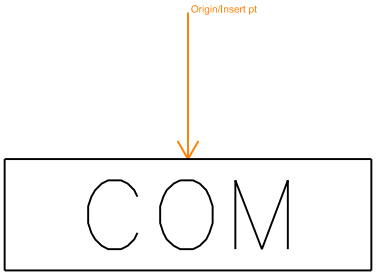
Electrical: CLOCKW
CLOCK OUTLET WALL MOUNTED
Element type: Symbol



Electrical: CMHLN
COMMO MANHOLE_NEW
Element type: Symbol

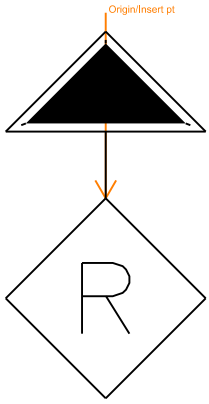


Electrical: CMHLX
COMMO MANHOLE_EXIST
Element type: Symbol

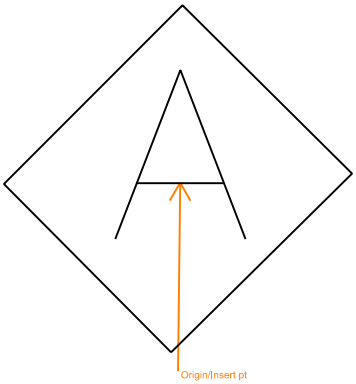


Electrical: CMPANL
COMMUNICATION PANEL
Element type: Symbol

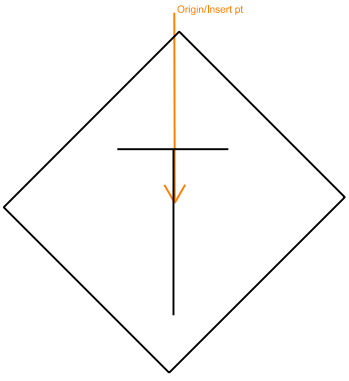
Electrical: CPLTM
CKT LINE TERMINATOR
Element type: Symbol



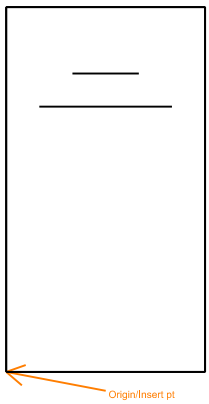
Electrical: CPREC2
CP RECTIFIER
Element type: Symbol



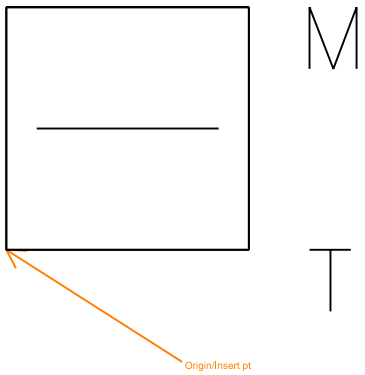
Electrical: CPSAN
CP SACRIFICIAL ANODE
Element type: Symbol



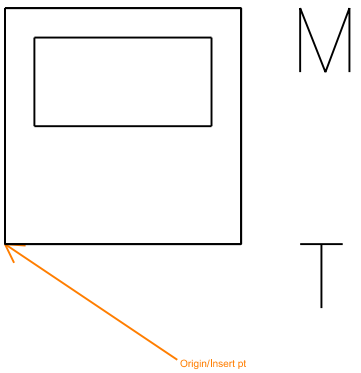
Electrical: CPTEST
CATHODIC PROTECT TEST STATN
Element type: Symbol



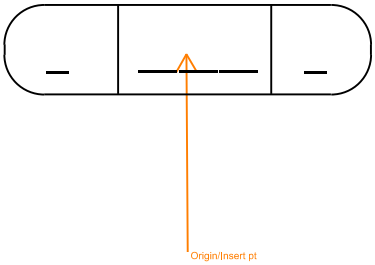
Electrical: CPU
CENTRAL PROCESSING UNIT
Element type: Symbol



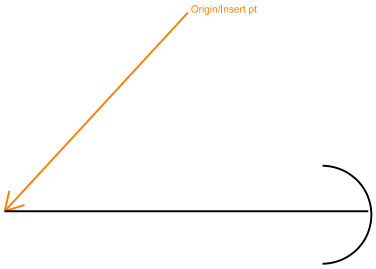
Electrical: CRDRDR
CARD ACCESS READER
Element type: Symbol



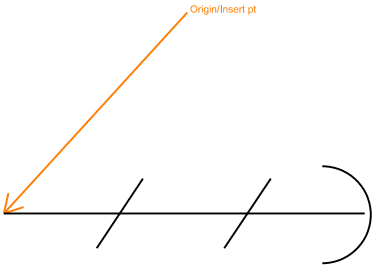
Electrical: CTRLPL
CONTROL PANEL
Element type: Symbol



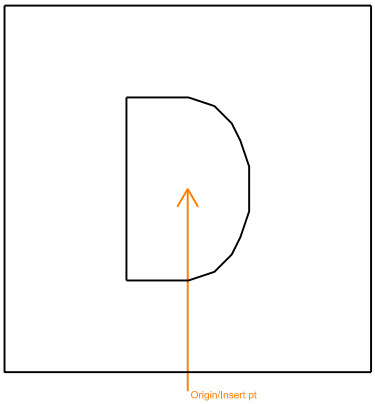
Electrical: DBID
DUCTBANK ID SYMBOL
Element type: Symbol



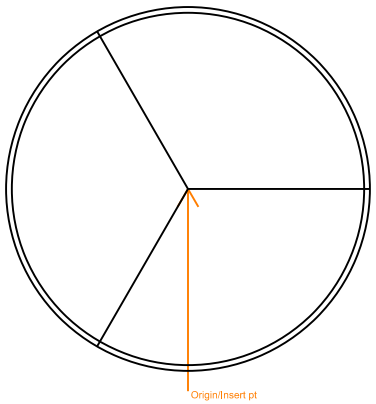
Electrical: DGUYN
DOWNGUY_NEW
Element type: Symbol



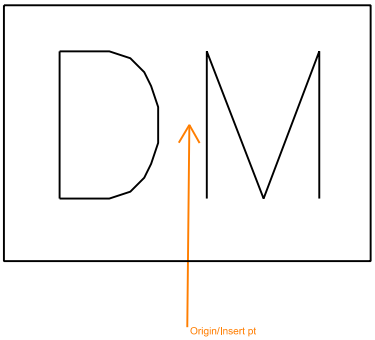
Electrical: DGUYR
DOWNGUY_REMOVE
Element type: Symbol



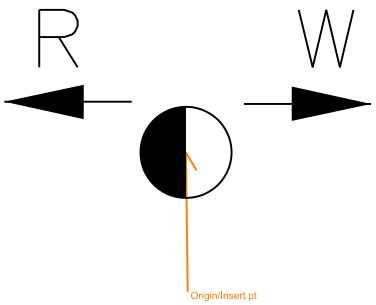
Electrical: DOROPN
ELECTRIC DOOR OPENER
Element type: Symbol



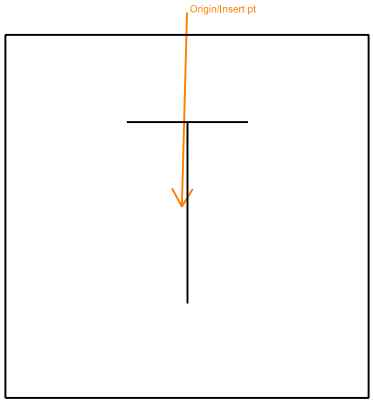
Electrical: DORREV
REVOLVING DOOR
Element type: Symbol



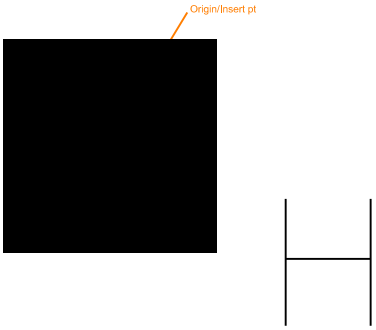
Electrical: DSTMKR
RW DISTANCE MARKER
Element type: Symbol



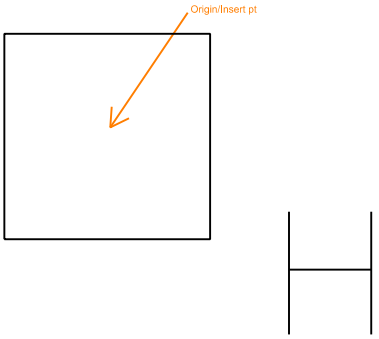
Electrical: DTHL
DISPLACE THRESHOLD LIGHT
Element type: Symbol



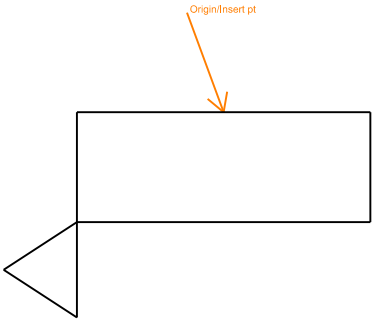
Electrical: DXFMR
DRY TYPE TRANSFORMER
Element type: Symbol



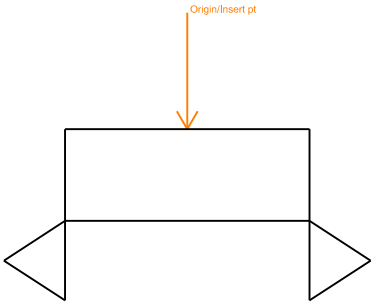
Electrical: EHHLN
ELEC HANDHOLE_NEW
Element type: Symbol



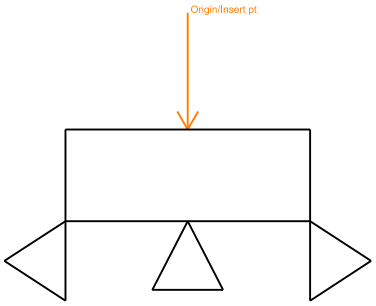
Electrical: EHHLX
ELEC HANDHOLE_EXIST
Element type: Symbol



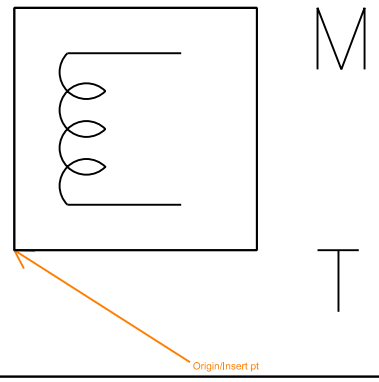
Electrical: ELBP1L
1LAMP EMRGNCY LGHTBTTRYPWR
Element type: Symbol



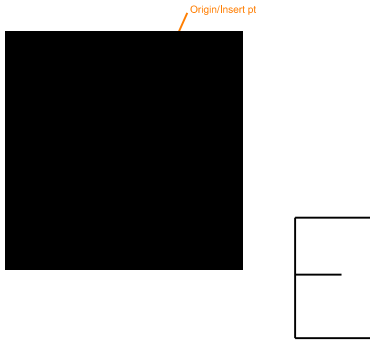
Electrical: ELBP2L
2LAMP EMRGNCY LGHTBTTRYPWR
Element type: Symbol



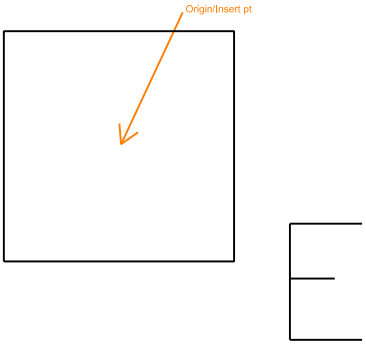
Electrical: ELBP3L
3LAMP EMRGNCY LGHTBTTRYPWR
Element type: Symbol



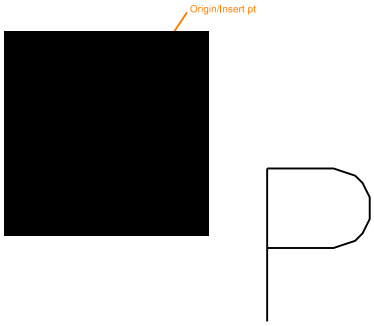
Electrical: ELLOCK
ELECTRONIC LOCK
Element type: Symbol



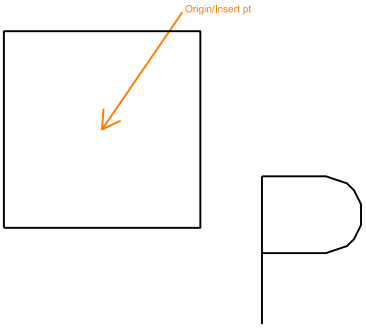
Electrical: EMHLN
ELEC MANHOLE_NEW
Element type: Symbol



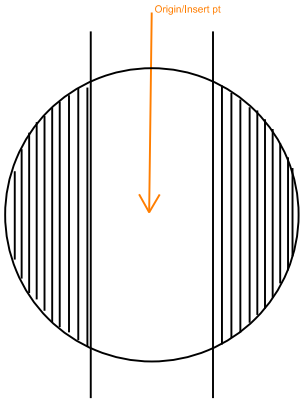
Electrical: EMHLX
ELEC MANHOLE_EXIST
Element type: Symbol



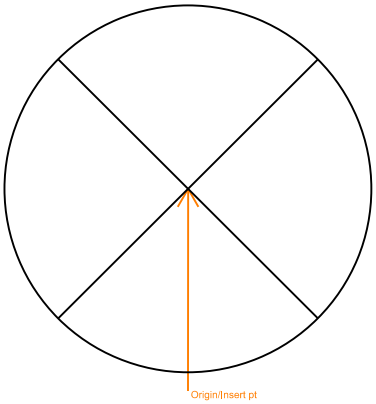
Electrical: EPBXN
ELEC PULLBOX_NEW
Element type: Symbol



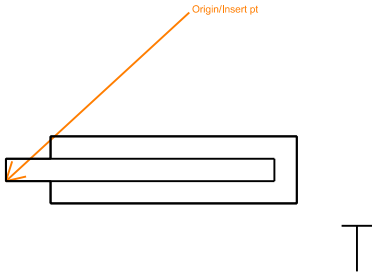
Electrical: EPBXX
ELEC PULLBOX_EXIST
Element type: Symbol



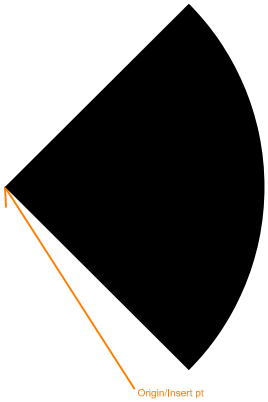
Electrical: ERECPT
EMERGENCY RECEPTACLE
Element type: Symbol



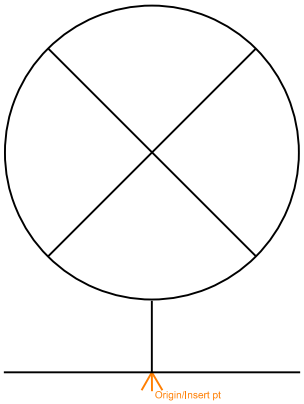
Electrical: EXITCM
CEILING MNTD EXITSIGN LIGHT
Element type: Symbol



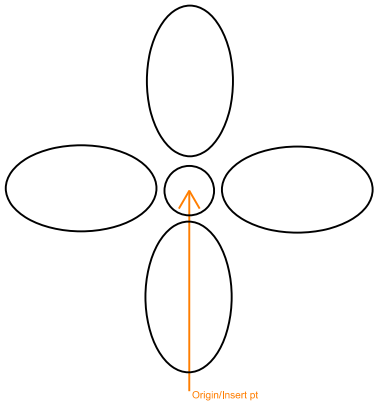
Electrical: EXITDV
EXIT DEVICE
Element type: Symbol



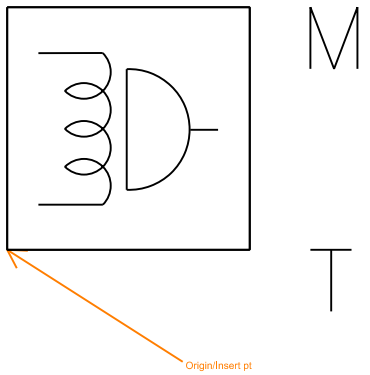
Electrical: EXITLF
EXIT SIGN LIGHTED FACE
Element type: Symbol



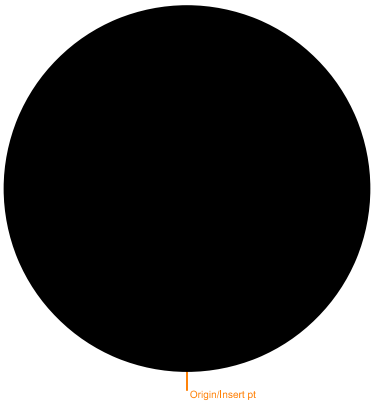
Electrical: EXITWM
WALL MOUNTD EXIT SIGN LIGHT
Element type: Symbol



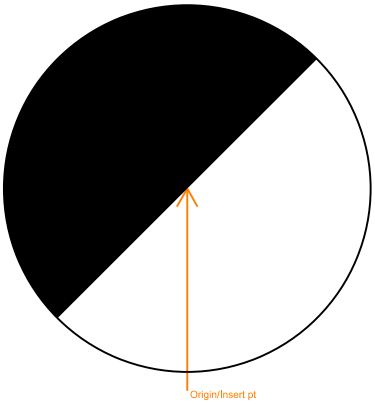
Electrical: FAN
CEILING FAN
Element type: Symbol



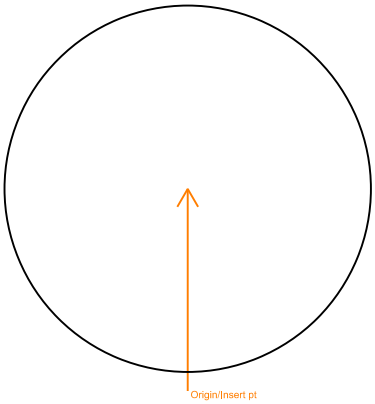
Electrical: FIBMOD
FIBER OPTIC MODULE
Element type: Symbol



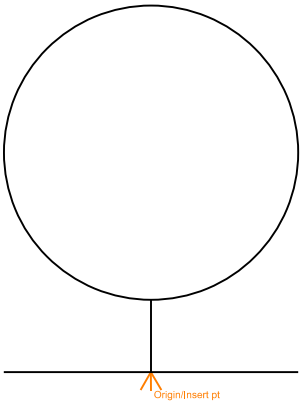
Electrical: FIXSPB
PENDANT BATTERY FIXTURE
Element type: Symbol



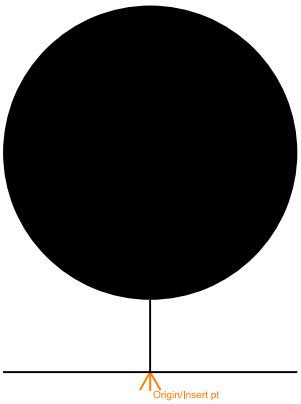
Electrical: FIXSPQ
PENDANT QUARTZ RESTRIKE
Element type: Symbol



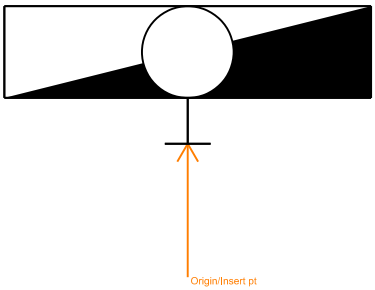
Electrical: FIXSPR
PENDANT FIXTURE
Element type: Symbol



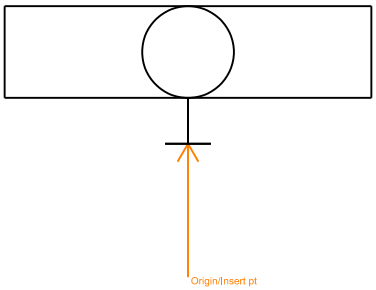
Electrical: FIXWM
WALL MOUNTED FIXTURE
Element type: Symbol



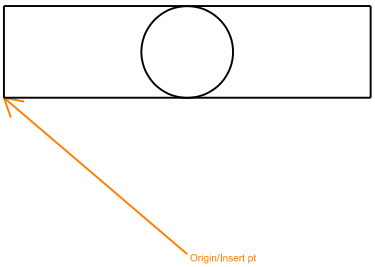
Electrical: FIXWMB
WALL MOUNTED BATTRY FIXTURE
Element type: Symbol



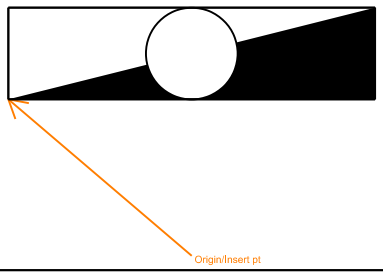
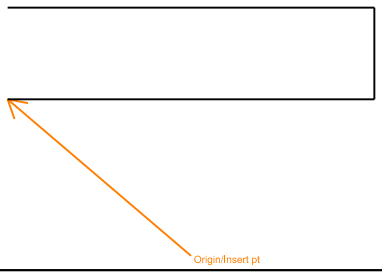
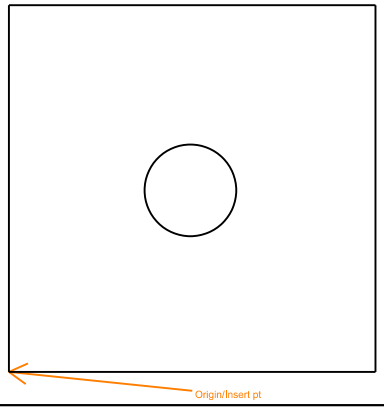
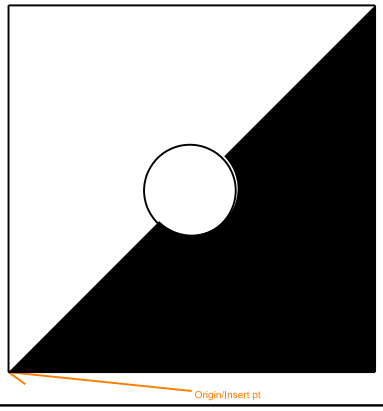
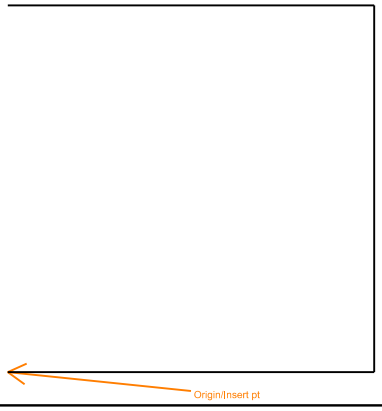
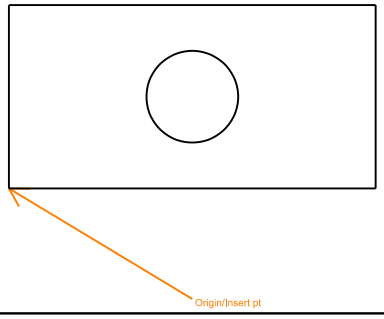
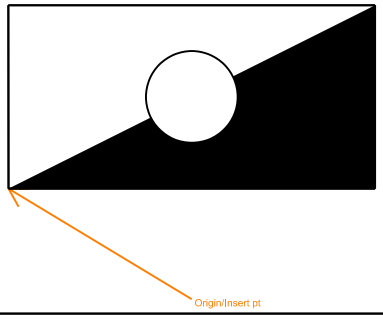
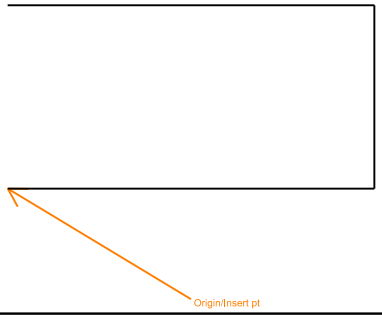
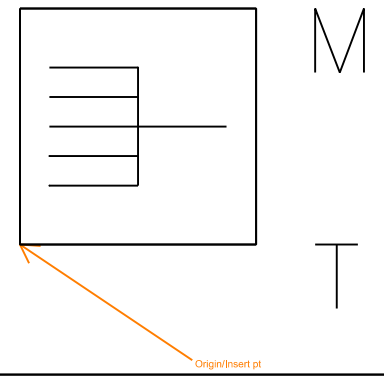
Electrical: FL14WB
1X4 WALL MNT FIXT W BATTERY
Element type: Symbol

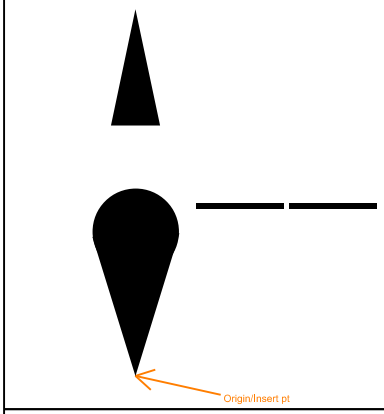
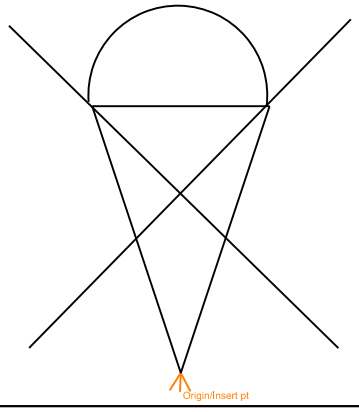
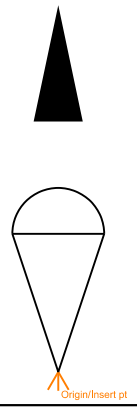
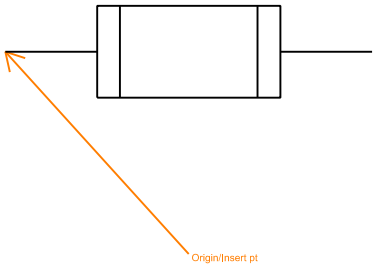
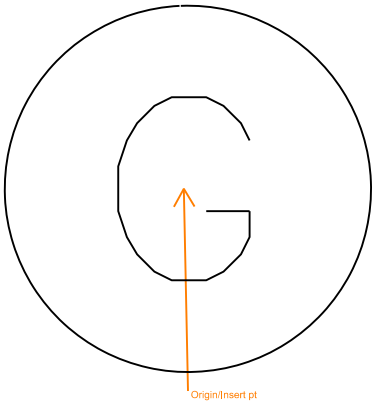
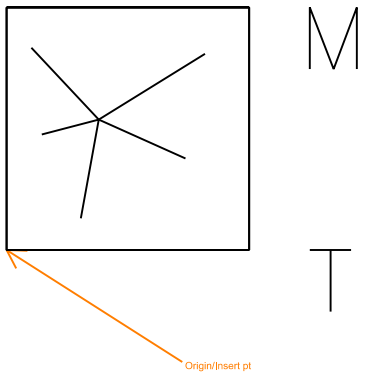
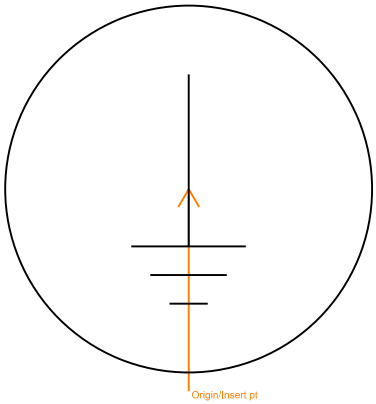
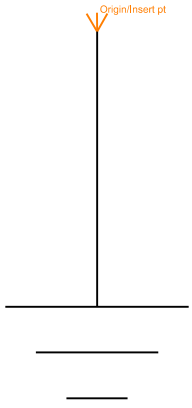


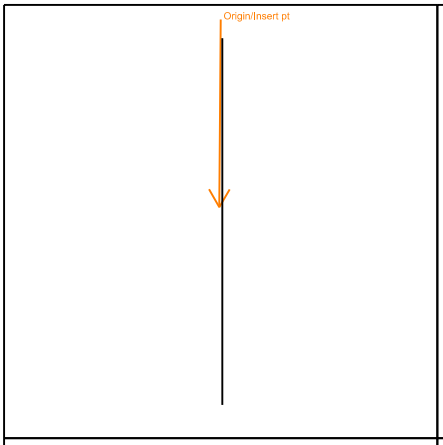
Electrical: FL14WM
1X4 WALL MNT FIXTURE
Element type: Symbol



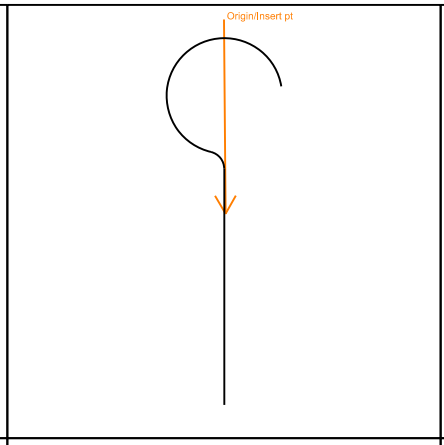
Electrical: FL1X4
1X4 LIGHT FIXTURE
Element type: Symbol

		
Electrical: FL1X4B 1X4 LIGHT FIXTURE W BATTERY Element type: Symbol	Electrical: FL1X4C 1X4 LIGHT CONTINUOUS Element type: Symbol	Electrical: FL2X2 2X2 LIGHT FIXTURE Element type: Symbol
		
Electrical: FL2X2B 2X2 LIGHT FIXTURE W BATTERY Element type: Symbol	Electrical: FL2X2C 2X2 LIGHT CONTINUOUS Element type: Symbol	Electrical: FL2X4 2X4 LIGHT FIXTURE Element type: Symbol
		
Electrical: FL2X4B 2X4 LIGHT FIXTURE W BATTERY Element type: Symbol	Electrical: FL2X4C 2X4 LIGHT CONTINUOUS Element type: Symbol	Electrical: FLDPNL FIELD PANEL Element type: Symbol

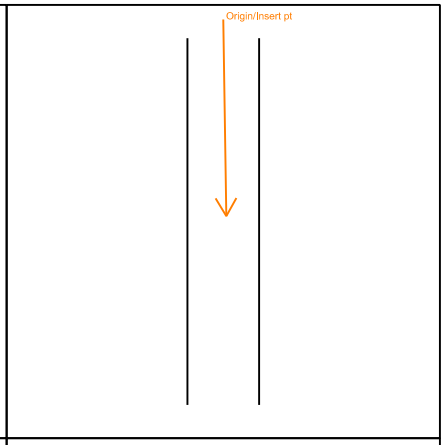
		
Electrical: FLTN FLOODLIGHT_NEW Element type: Symbol	Electrical: FLTR FLOODLIGHT_REMOVE Element type: Symbol	Electrical: FLTX FLOODLIGHT_EXISTING Element type: Symbol
		
Electrical: FUSRAT FUSE WITH RATING Element type: Symbol	Electrical: GENRTR GENERATOR Element type: Symbol	Electrical: GLASBR GLASS BREAKAGE SENSOR Element type: Symbol
		
Electrical: GRDROD GROUNDING ROD Element type: Symbol	Electrical: GROUND EARTH GROUND Element type: Symbol	Electrical: HAS1H 1 HOT LEG Element type: Symbol



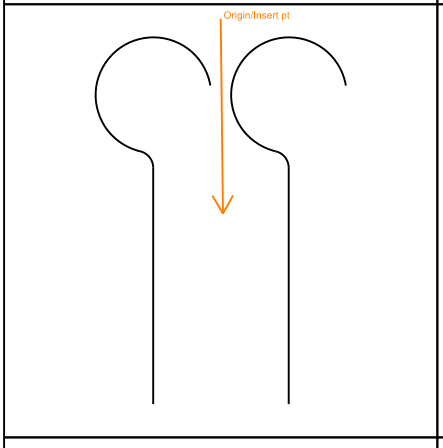
Electrical: HAS1N
1 NEUTRAL LEG
Element type: Symbol



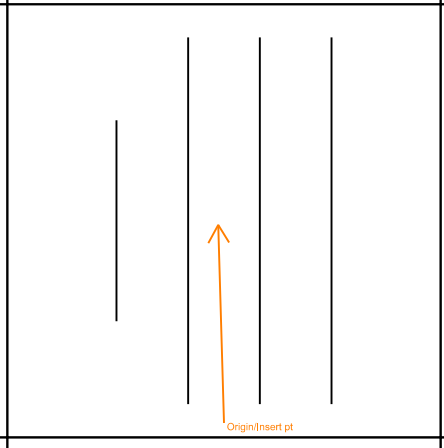
Electrical: HAS1S
1 SWITCH LEG
Element type: Symbol



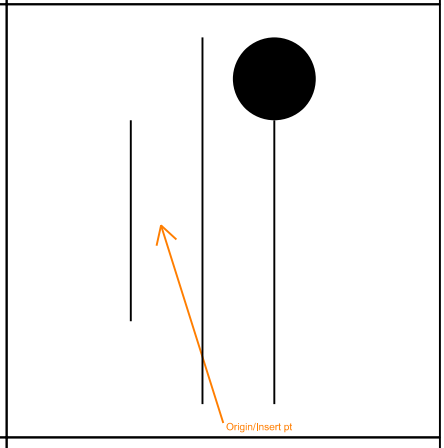
Electrical: HAS2H
2 HOT LEGS
Element type: Symbol



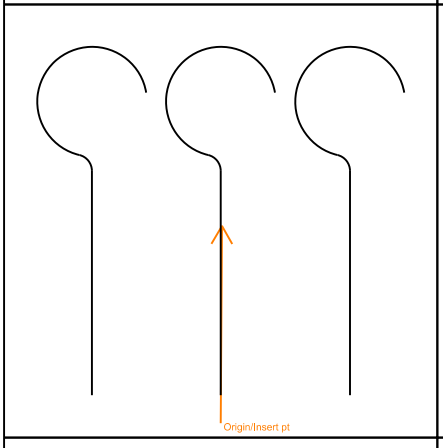
Electrical: HAS2S
2 SWITCH LEGS
Element type: Symbol



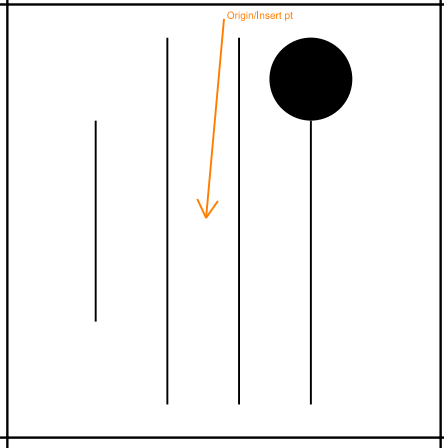
Electrical: HAS3HN
3 HOT 1 NEUT LEGS
Element type: Symbol



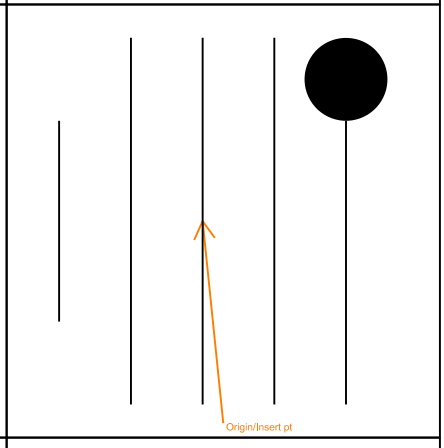
Electrical: HAS3MK
HOT NEUTRAL GROUND
Element type: Symbol



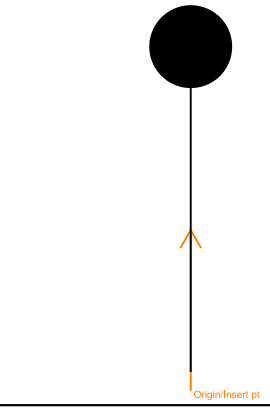
Electrical: HAS3S
3 SWITCH LEG
Element type: Symbol



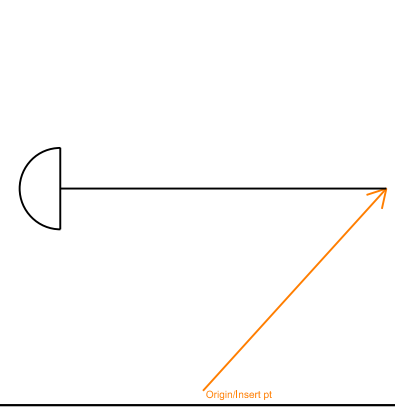
Electrical: HAS4MK
2 HOT NEUTRAL GROUND
Element type: Symbol



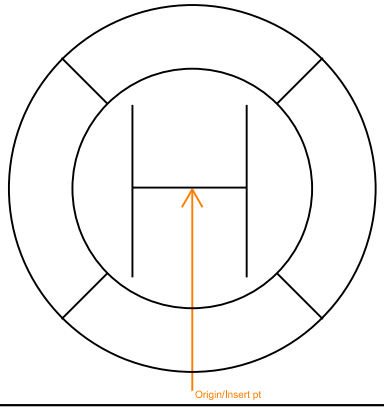
Electrical: HAS5MK
3 HOT NEUTRAL GROUND
Element type: Symbol



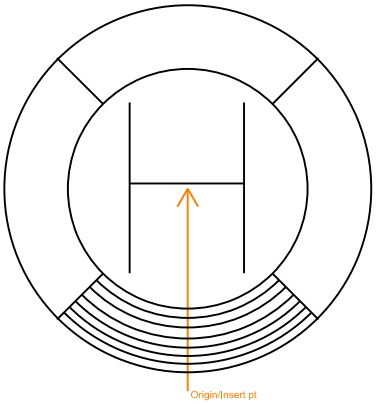
Electrical: HASGND
1 GROUND LEG
Element type: Symbol



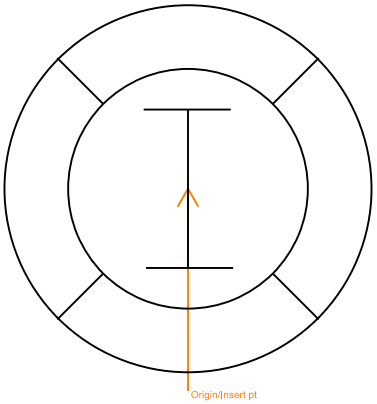
Electrical: HEDASW
AERIAL SERVICE WEATHER HEAD
Element type: Symbol



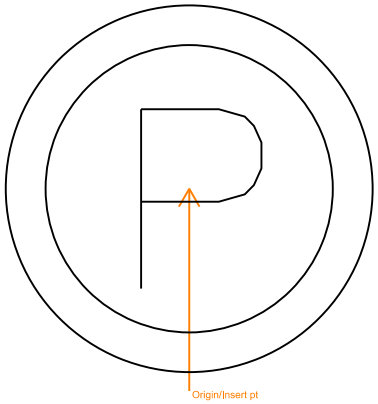
Electrical: HLL
HOVERLANE
Element type: Symbol



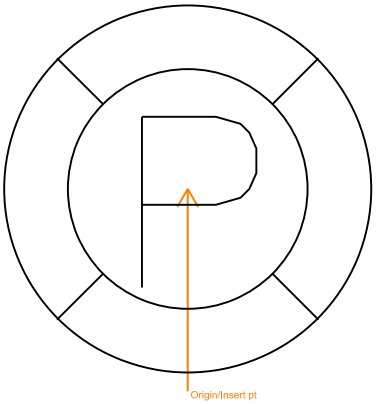
Electrical: HLLL
HOVERLANE LIMIT LIGHT
Element type: Symbol



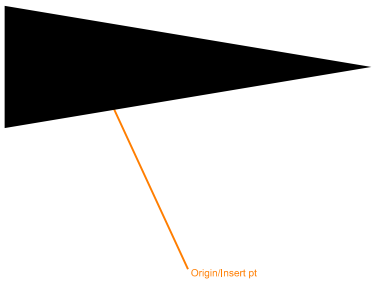
Electrical: HPIL
HELIPAD INSET LIGHT
Element type: Symbol



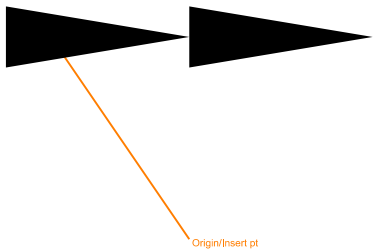
Electrical: HPPLEL
HELIPAD PER LIGHT_ELEVATED
Element type: Symbol



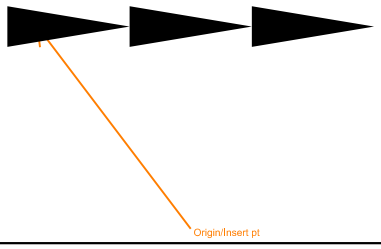
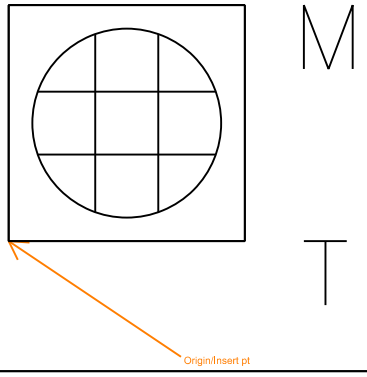
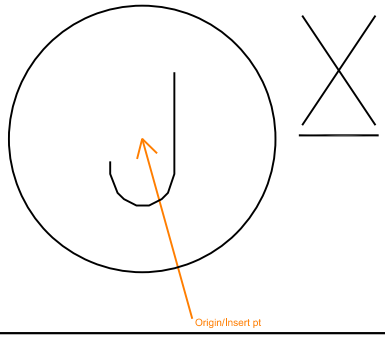
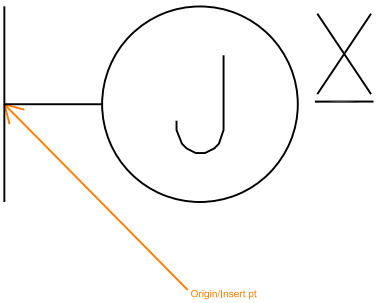
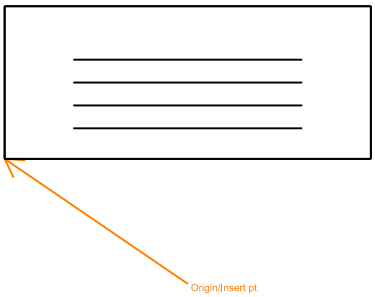
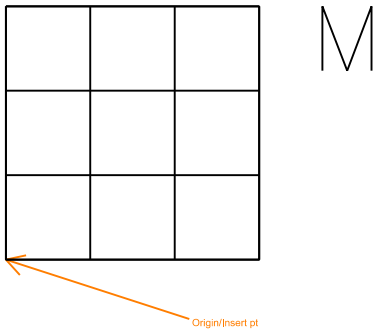
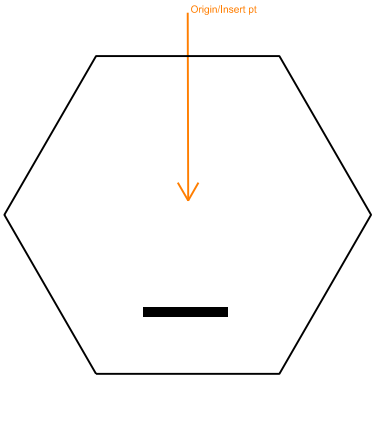
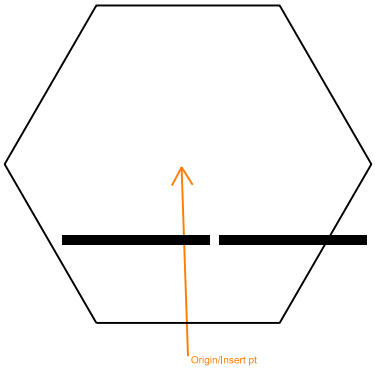
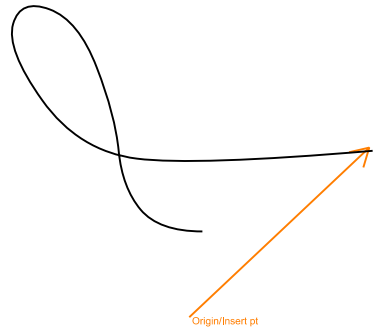
Electrical: HPPLSF
HELIPAD PERLIGHT_SEMIFLUSH
Element type: Symbol

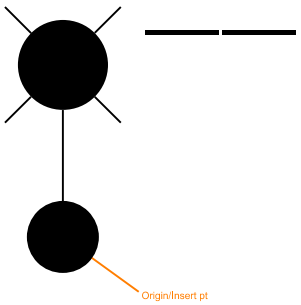


Electrical: HRUN1
HOME RUN 1
Element type: Symbol

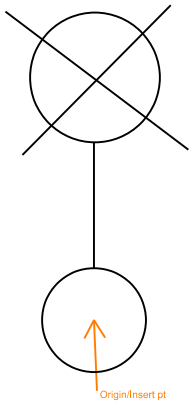


Electrical: HRUN2
HOME RUN 2
Element type: Symbol

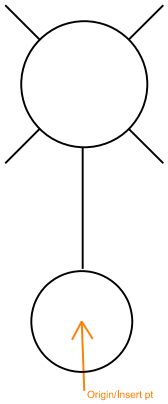
		
Electrical: HRUN3 HOME RUN 3 Element type: Symbol	Electrical: INTCOM INTERCOM Element type: Symbol	Electrical: JNBX EXTERIOR UTIL JUNCTION BOX Element type: Symbol
		
Electrical: JNBXWM JUNCTION BOX WALL MT Element type: Symbol	Electrical: KEYBRD KEYBOARD Element type: Symbol	Electrical: KEYPAD KEYPAD DEVICE Element type: Symbol
		
Electrical: KNR KEYED NOTE REFERENCE Element type: Symbol	Electrical: KNRM KEYED NOT MULTIPLE Element type: Symbol	Electrical: LEADER LEADER LINE Element type: Symbol



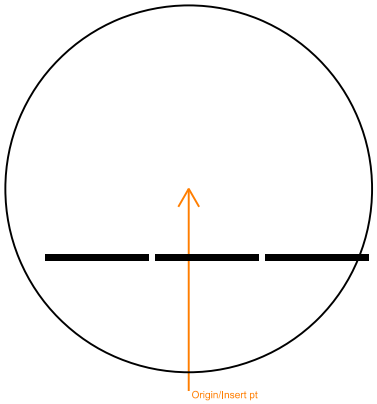
Electrical: LTPLN
LIGHT POLE_NEW
Element type: Symbol



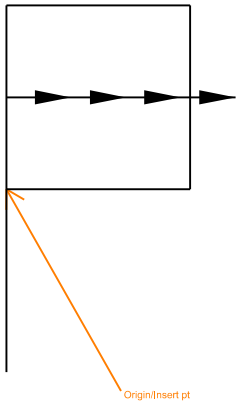
Electrical: LTPLR
LIGHT POLE_REMOVE
Element type: Symbol



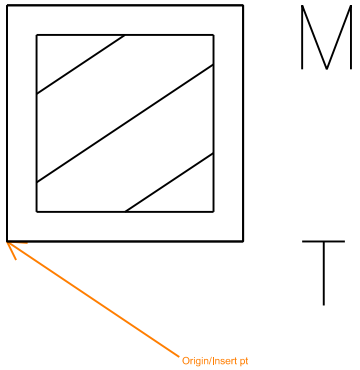
Electrical: LTPLX
LIGHT POLE_EXISTING
Element type: Symbol



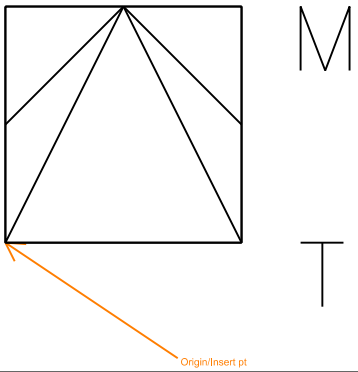
Electrical: METREL
ELECTRICAL METER
Element type: Symbol



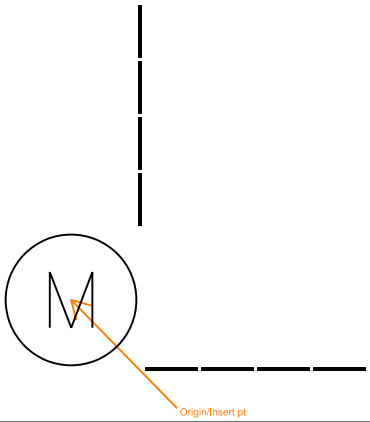
Electrical: MICROW
OUTDOOR MICROWAVE XMIT UNT
Element type: Symbol



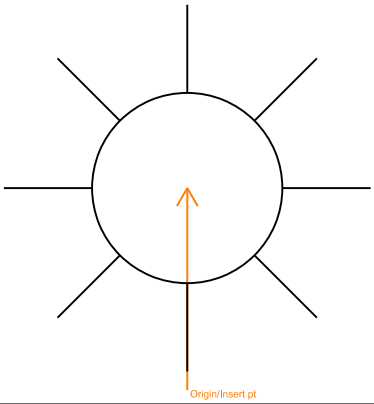
Electrical: MONITR
MONITOR
Element type: Symbol



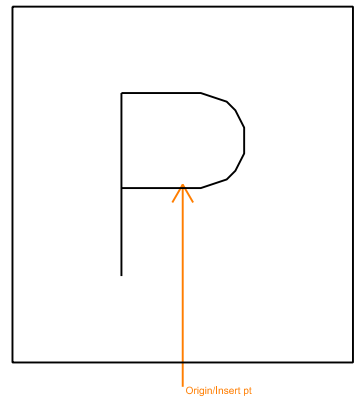
Electrical: MOTION
MOTION DETECTOR
Element type: Symbol



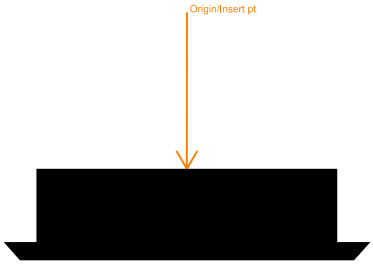
Electrical: MOTRHP
MOTOR HP
Element type: Symbol



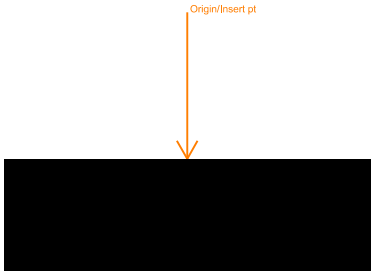
Electrical: OBSTRL
OBSTRUCTION LIGHT
Element type: Symbol



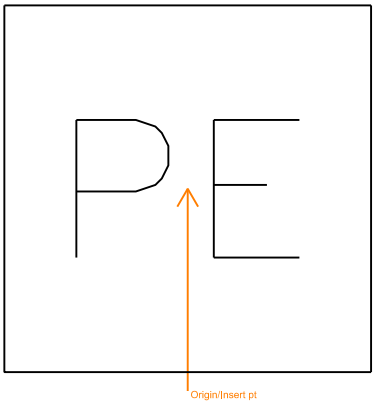
Electrical: PAPI
PAPI LIGHT UNIT
Element type: Symbol



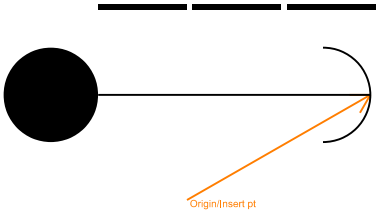
Electrical: PBFMC
FLUSH MNTD PANELBRD CABINET
Element type: Symbol



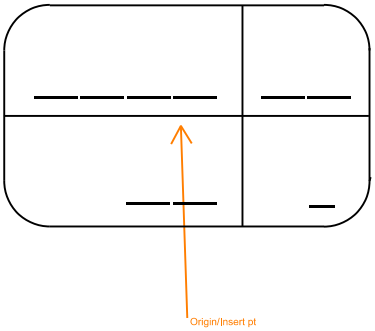
Electrical: PBSMC
SURFACE MNTD PANELBRD CAB
Element type: Symbol



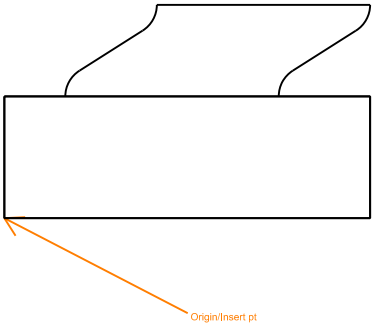
Electrical: PHOTO
PHOTOELECTRIC RELAY
Element type: Symbol



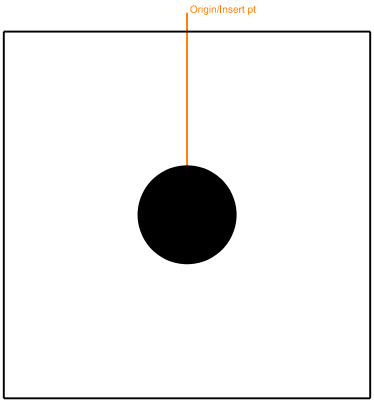
Electrical: POLEAR
AERIAL POLE W GUYING
Element type: Symbol



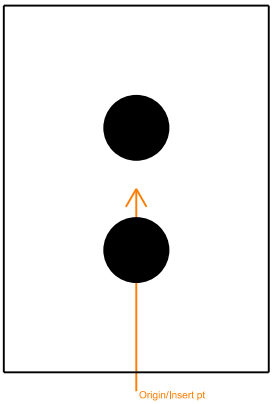
Electrical: POLEID
POLE IDENT. SYMBOL
Element type: Symbol



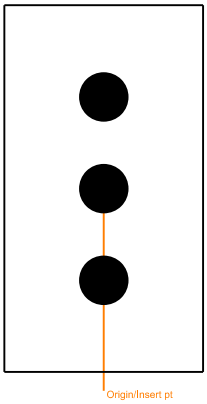
Electrical: PRINTR
PRINTER
Element type: Symbol



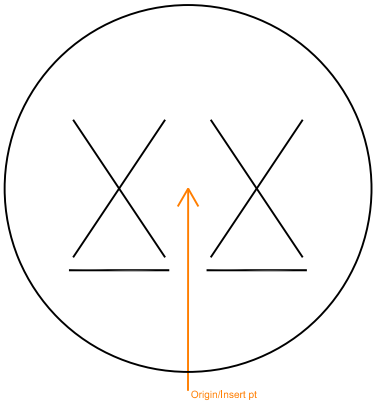
Electrical: PSHST1
ONE PUSHBUTTON STATION
Element type: Symbol



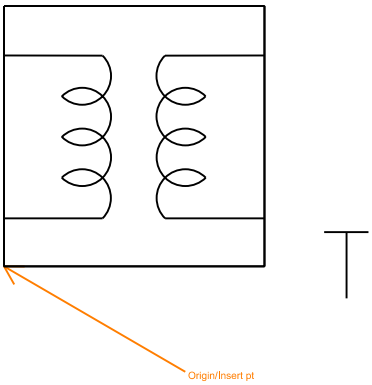
Electrical: PSHST2
TWO PUSHBUTTON STATION
Element type: Symbol



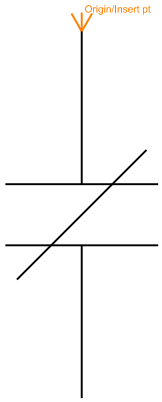
Electrical: PSHST3
THREE PUSHBUTTON STATION
Element type: Symbol



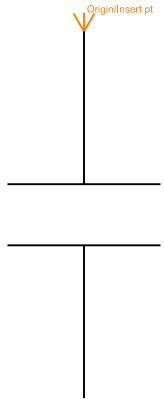
Electrical: PWRDVC
POWER SYSTEM DEVICE ANSI
Element type: Symbol



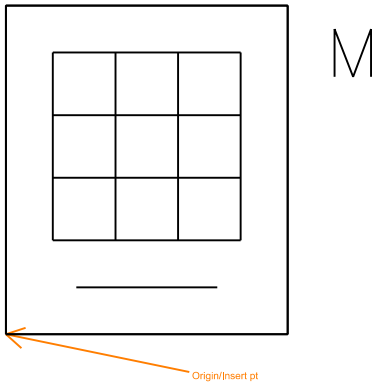
Electrical: PWRSPY
POWER SUPPLY
Element type: Symbol



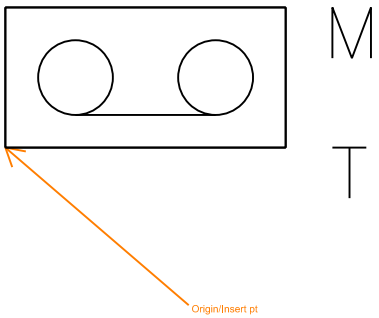
Electrical: RCNC
NORMALLY CLSD RELAY CONTACT
Element type: Symbol



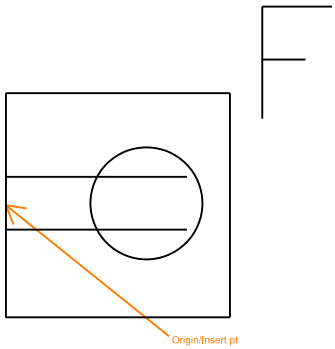
Electrical: RCNO
NORMALLY OPEN RELAY CONTACT
Element type: Symbol



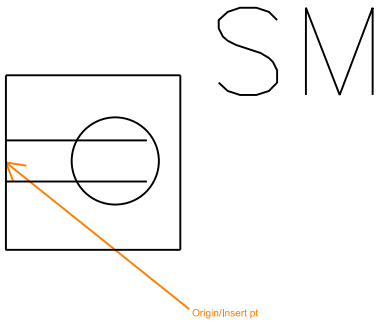
Electrical: RDRKPD
CARD READER WITH KEYPAD
Element type: Symbol



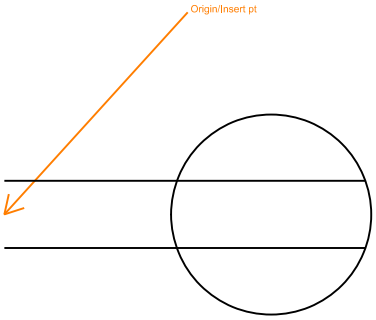
Electrical: RECDER
RECORDER
Element type: Symbol



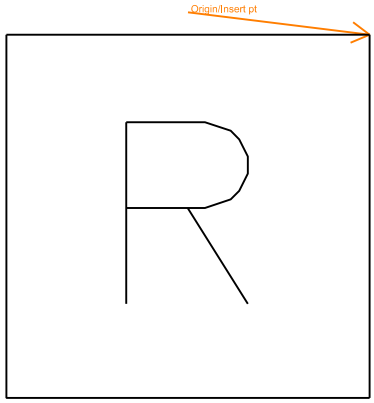
Electrical: RECDFM
DOUBLEFLUSHMOUNTFLOOROUTLET
Element type: Symbol



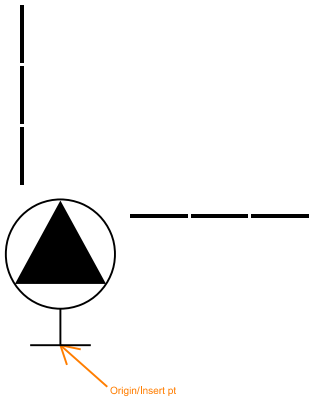
Electrical: RECDSM
DOUBLESURFMOUNTFLOOROUTLET
Element type: Symbol



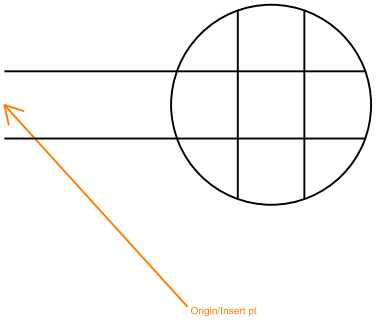
Electrical: RECDUP
DUPLEX RECEPTACLE
Element type: Symbol



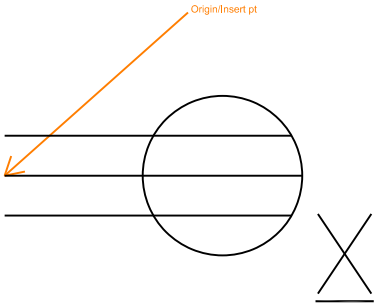
Electrical: RECLOS
RECLOSER AERIAL AUTOMATIC
Element type: Symbol



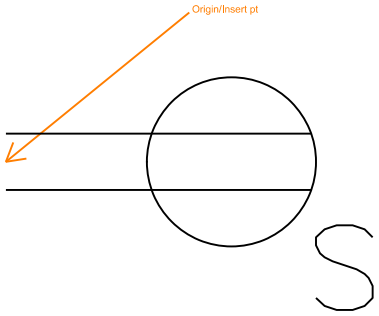
Electrical: RECPT2
SPECIAL RECEPTACLE
Element type: Symbol



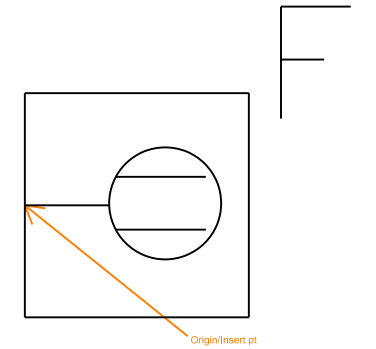
Electrical: RECQUA
QUADRAPLEX RECEPTACLE
Element type: Symbol



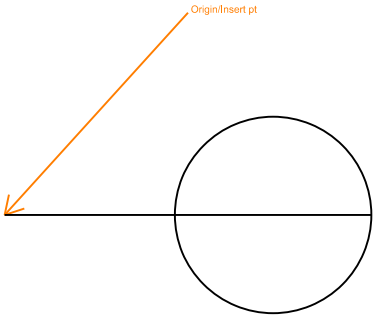
Electrical: RECRAN
RECEPTACLE RANGE
Element type: Symbol



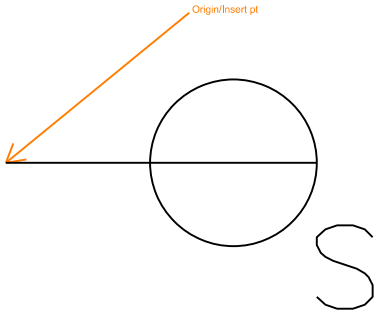
Electrical: RECSDP
SWITCHED DUPLEX RECEPTACLE
Element type: Symbol



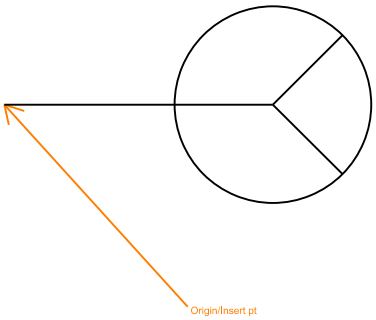
Electrical: RECSFM
SINGLE FLUSH MOUNT FLR OUTL
Element type: Symbol



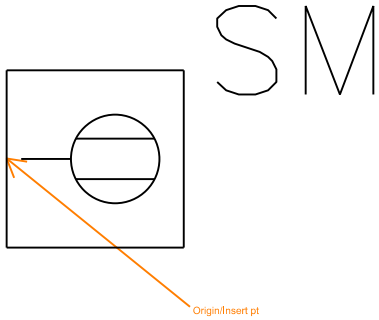
Electrical: RECSIN
SINGLE RECEPTACLE
Element type: Symbol



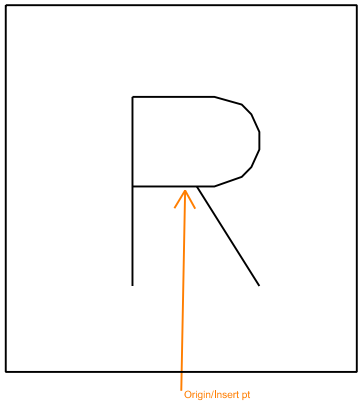
Electrical: RECSNS
SNGL RECEPTACLE WITH SWITCH
Element type: Symbol



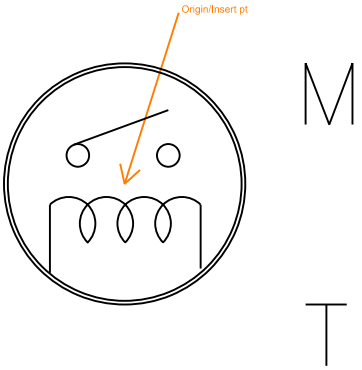
Electrical: RECSPR
SPECIAL PURPOSE RECEPTACLE
Element type: Symbol



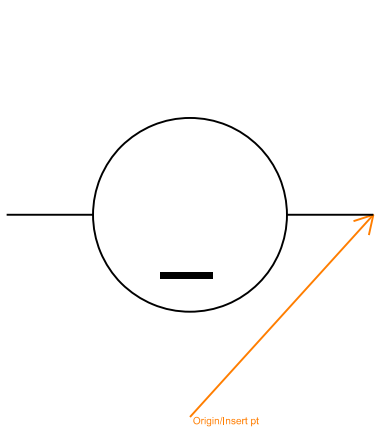
Electrical: RECSSM
SINGLESURFMOUNTFLOOROUTLET
Element type: Symbol



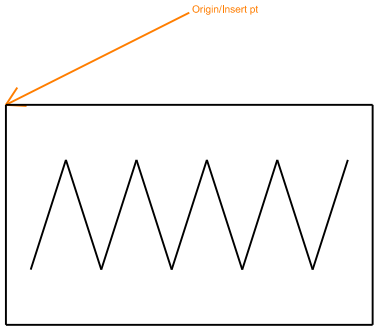
Electrical: REIL
REIL LIGHT UNIT
Element type: Symbol



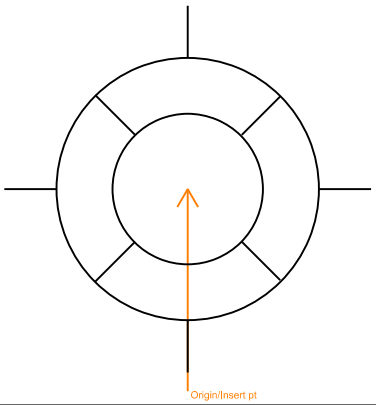
Electrical: RELAY
RELAY SWITCH
Element type: Symbol



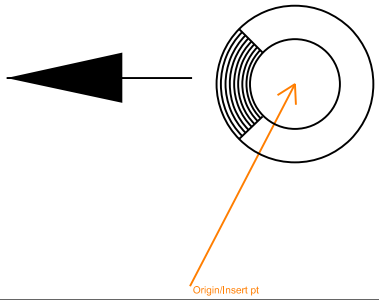
Electrical: RELYOP
RELAY OP COIL
Element type: Symbol



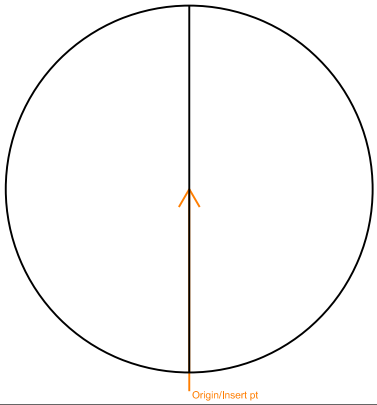
Electrical: RESHTR
ELECTRIC RESISTANCE HEATER
Element type: Symbol



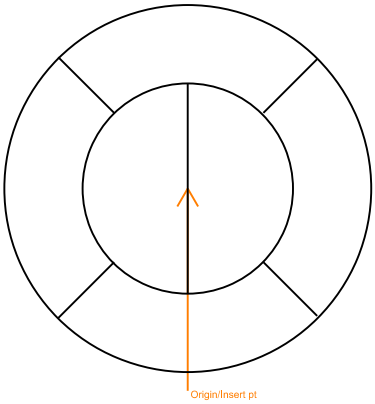
Electrical: RWCLL
RW CENTERLINE LIGHT
Element type: Symbol



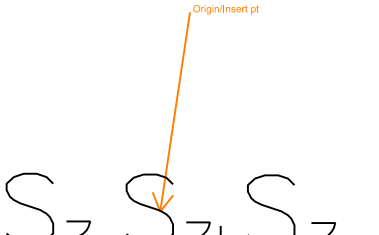
Electrical: RWEL
RW END LIGHT
Element type: Symbol



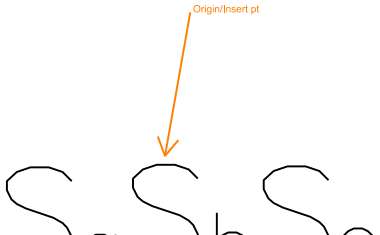
Electrical: RWLEL
RW EDGE LIGHT_ELEVATED
Element type: Symbol



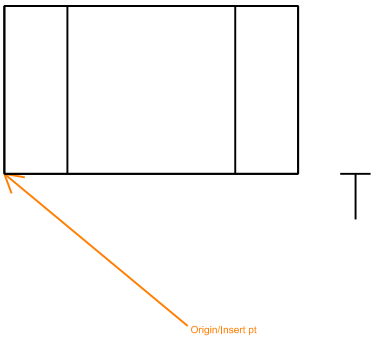
Electrical: RWLSF
RW EDGE LIGHT_SEMIFLUSH
Element type: Symbol



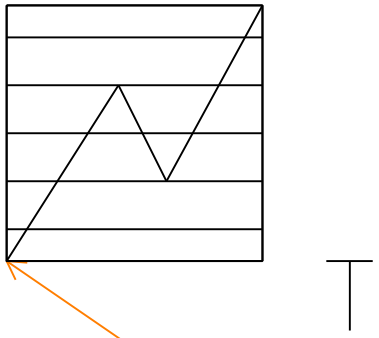
Electrical: S3ABC
3 THREE WAY SWITCHES
Element type: Symbol



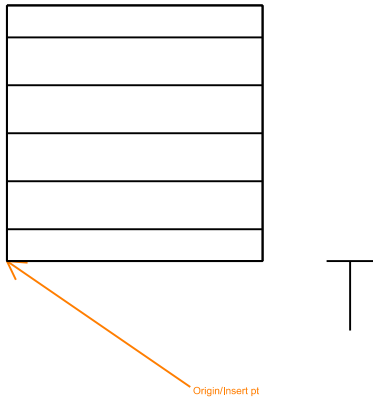
Electrical: SABC
THREE SINGLE SWITCHES
Element type: Symbol



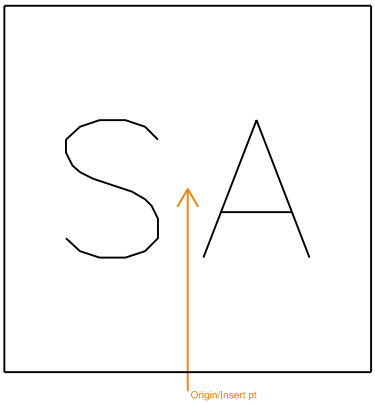
Electrical: SCRDEV
SCREENING DEVICE
Element type: Symbol



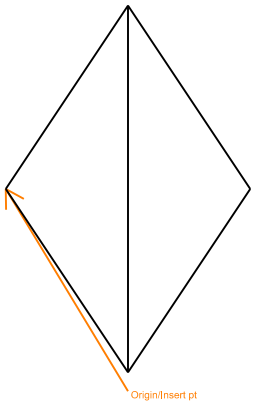
Electrical: SECSA
SECURITY SCREEN WITH ALARM
Element type: Symbol



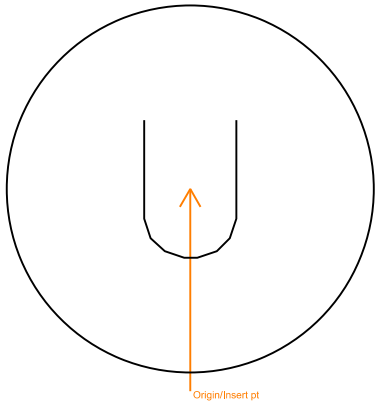
Electrical: SECSW
SECURITY WINDOW SCREEN
Element type: Symbol



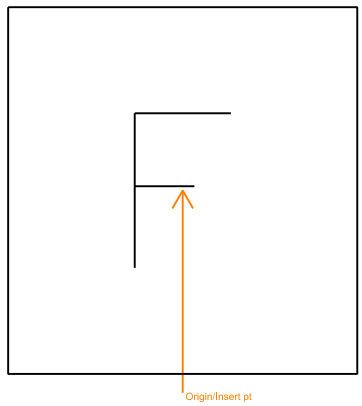
Electrical: SECTAA
SECTIONALIZER AERIAL AUTO
Element type: Symbol



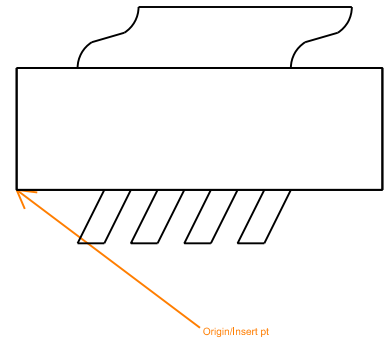
Electrical: SENGV
GENERIC VOLUMETRIC SENSOR
Element type: Symbol



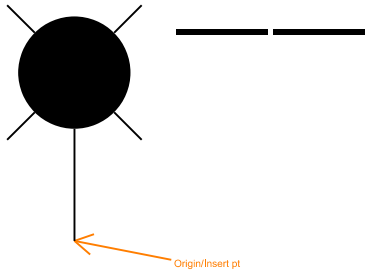
Electrical: SENULS
ULTRASONIC SENSOR
Element type: Symbol



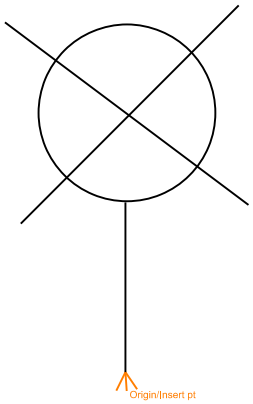
Electrical: SFL
SEQUENCED FLASHER LIGHT
Element type: Symbol



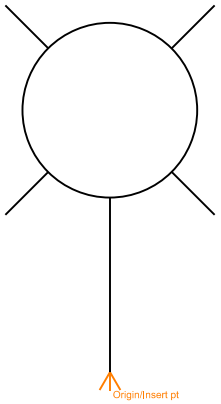
Electrical: SHREDR
DOCUMENT DESTROYER
Element type: Symbol



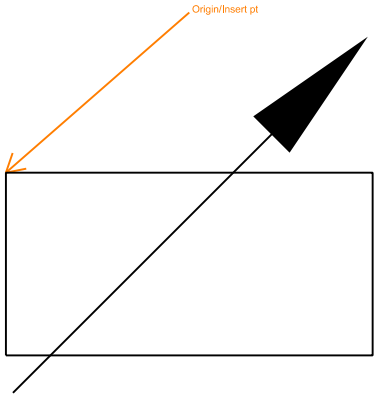
Electrical: SLLN
STREETLITE LUMINAIRE_NEW
Element type: Symbol



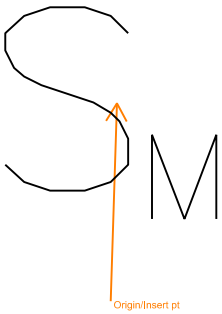
Electrical: SLLR
STREETLITE LUMINAIRE_REMOV
Element type: Symbol



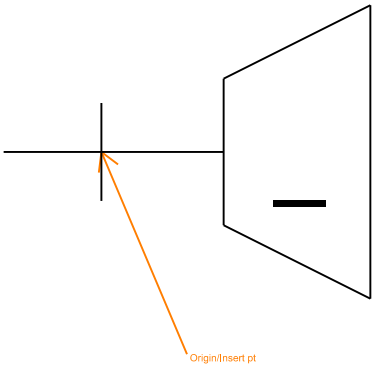
Electrical: SLLX
STREETLITE LUMINAIRE_EXIST
Element type: Symbol



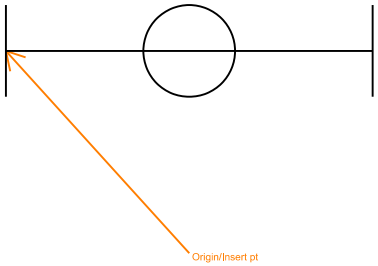
Electrical: SLREG
CONSTNT CURRENT TRANSFORMER
Element type: Symbol



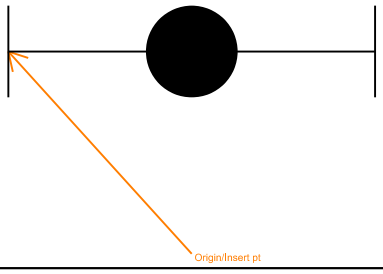
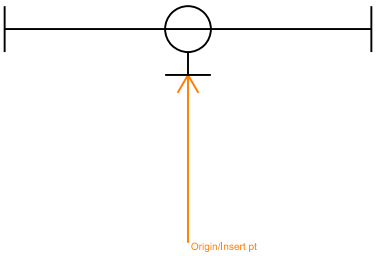
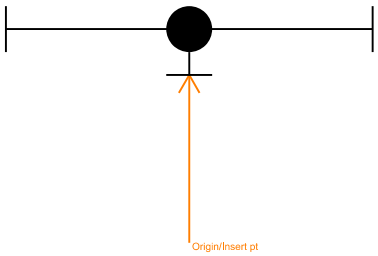
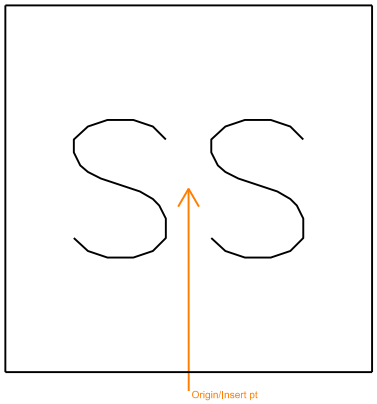
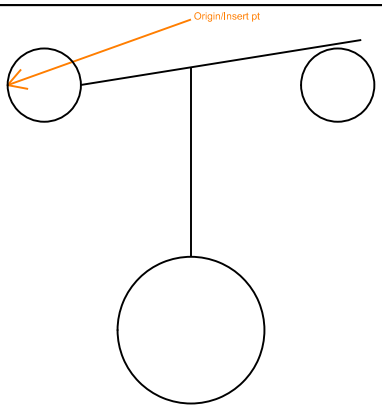
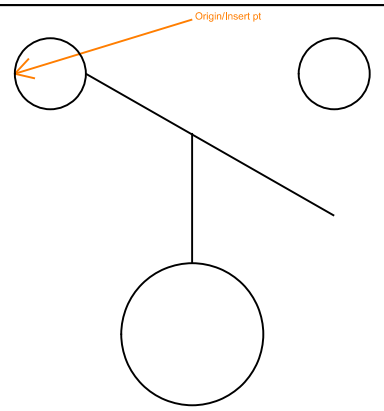
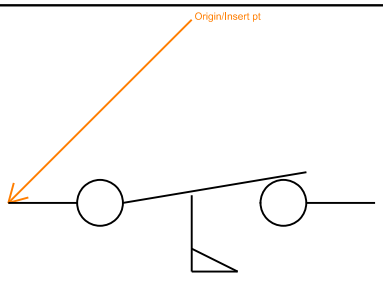
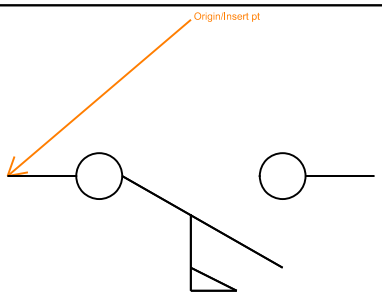
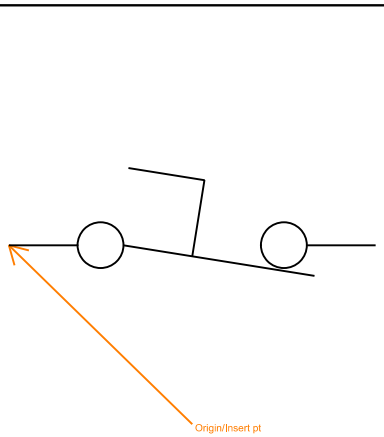
Electrical: SM
MOTOR SWITCH
Element type: Symbol

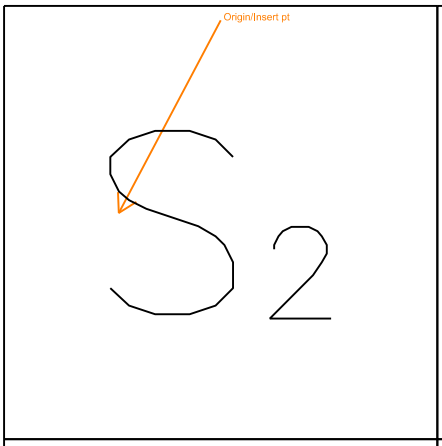


Electrical: SOUNDS
SOUND SYSTEM INDICATE USE
Element type: Symbol

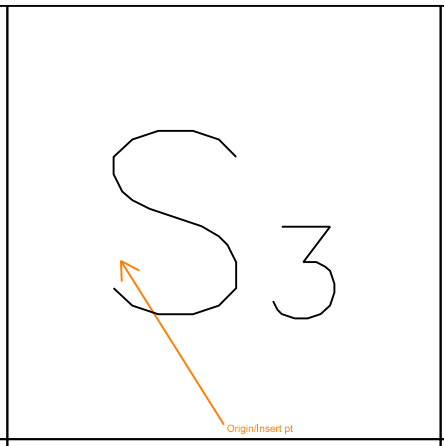


Electrical: STP14
SURFACE REC 1X4 STRP
Element type: Symbol

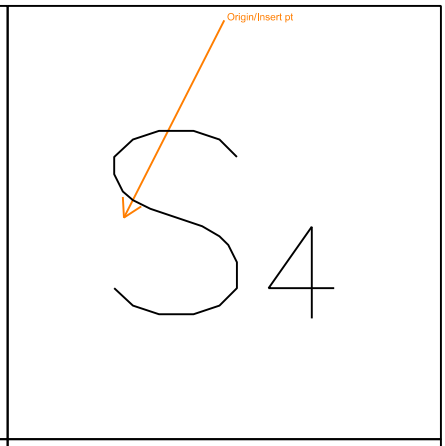
		
Electrical: STP14B SURFACE 1X4 STRIP BATTERY Element type: Symbol	Electrical: STP18 SURFACE REC 1X8 STRP Element type: Symbol	Electrical: STP18B SURFACE 1X8 STRIP BATT Element type: Symbol
		
Electrical: SUBSTA SUBSTATION Element type: Symbol	Electrical: SWFLNC NORMALLY CLOSED FLOAT SWTCH Element type: Symbol	Electrical: SWFLNO NORMALLY OPEN FLOAT SWITCH Element type: Symbol
		
Electrical: SWFNC NORMALLY CLOSED FLOW SWITCH Element type: Symbol	Electrical: SWFNO NORMALLY OPEN FLOW SWITCH Element type: Symbol	Electrical: SWFONC NORM CLSD FOOT OPRTD SWTCH Element type: Symbol



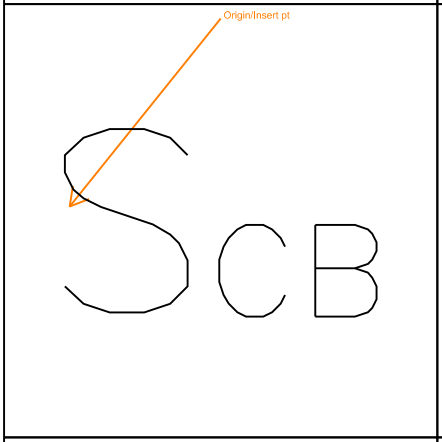
Electrical: SWI2WY
DOUBLE POLE SWITCH
Element type: Symbol



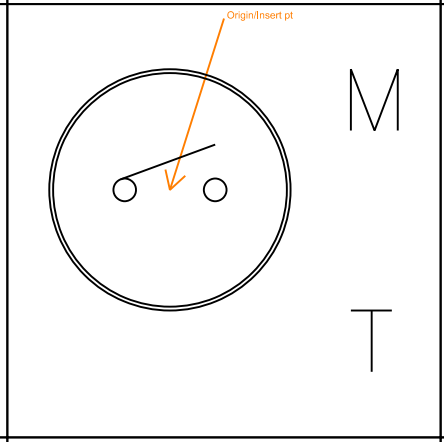
Electrical: SWI3WY
THREE WAY SWITCH
Element type: Symbol



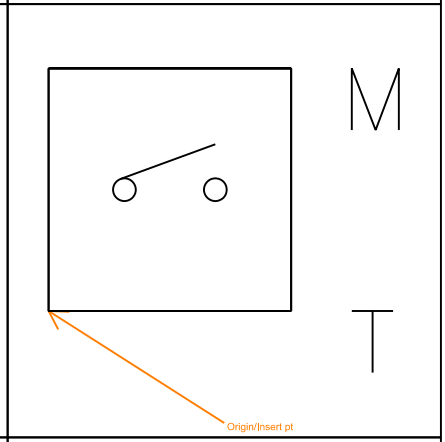
Electrical: SWI4WY
FOUR WAY SWITCH
Element type: Symbol



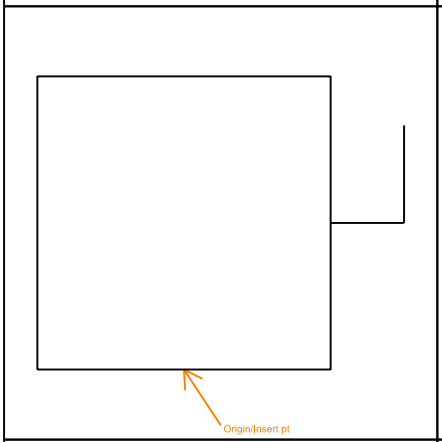
Electrical: SWICB
CIRCUIT BREAKER
Element type: Symbol



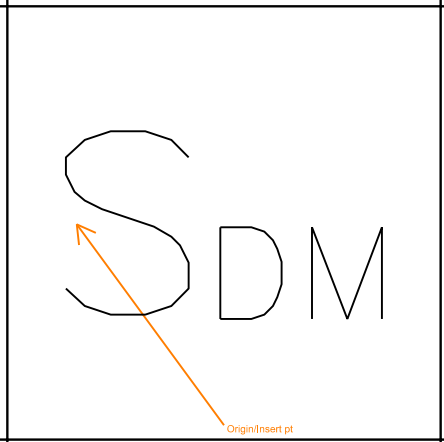
Electrical: SWICHA
AUTOMATIC MONITORING SWITCH
Element type: Symbol



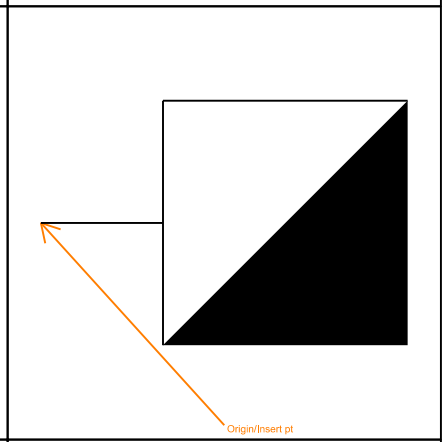
Electrical: SWICHM
MANUALLY OPERATED SWITCH
Element type: Symbol



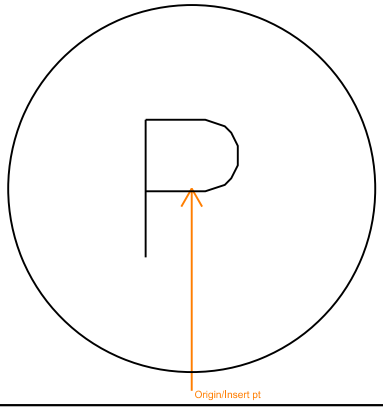
Electrical: SWIDIS
DISCONNECT SWITCH
Element type: Symbol



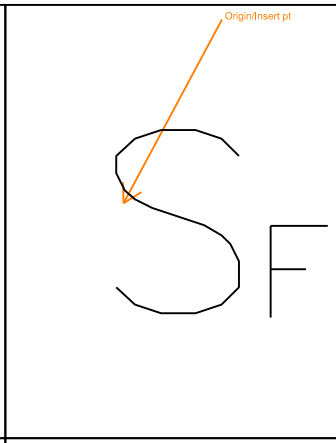
Electrical: SWIDM1
DIMMER
Element type: Symbol



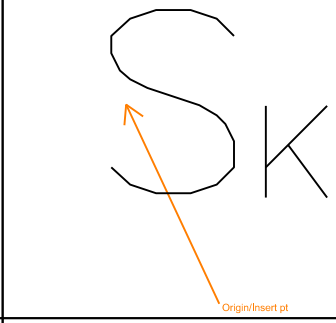
Electrical: SWIDM2
DIMMER SWITCH
Element type: Symbol



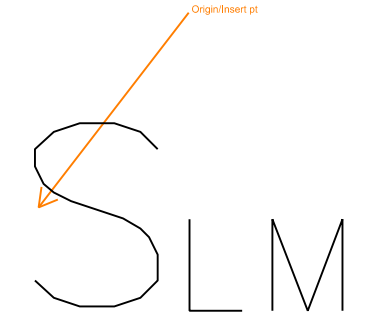
Electrical: SWIDUR
DURESS SWITCH
Element type: Symbol



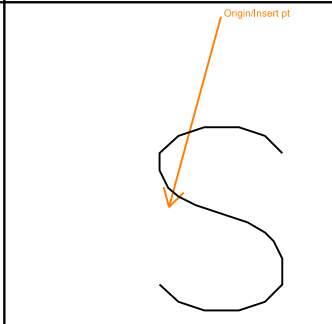
Electrical: SWIFUS
FUSED SWITCH
Element type: Symbol



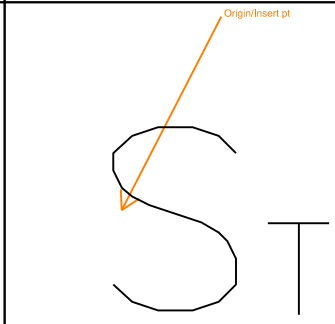
Electrical: SWIKEY
KEY OPERATED SWITCH
Element type: Symbol



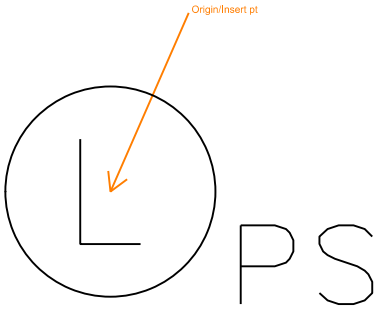
Electrical: SWILVM
LOW VOLTAGE MASTER SWITCH
Element type: Symbol



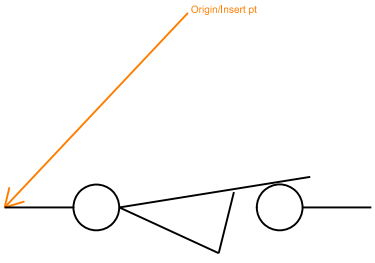
Electrical: SWITCH
SINGLE POLE SWITCH
Element type: Symbol



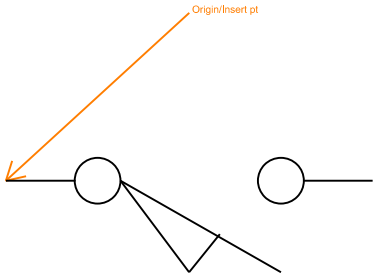
Electrical: SWITIM
TIMER OPERATED SWITCH
Element type: Symbol



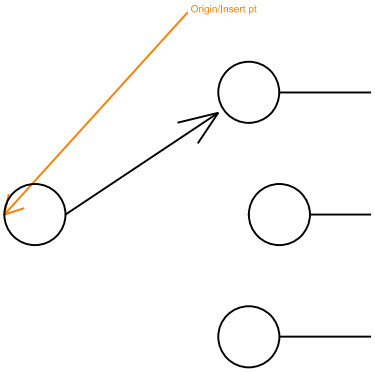
Electrical: SWLAMP
LAMP HOLDER POLE SWITCH
Element type: Symbol



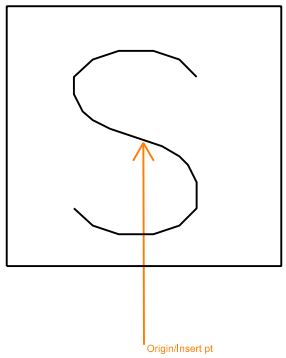
Electrical: SWLNC
NORMALLY CLOSED LIMIT SWTCH
Element type: Symbol



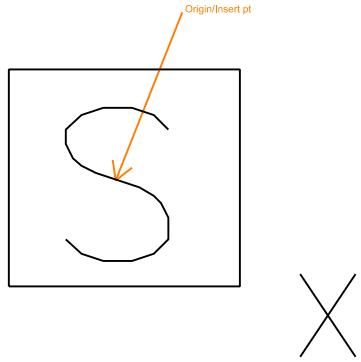
Electrical: SWLNO
NORMALLY OPEN LIMIT SWITCH
Element type: Symbol



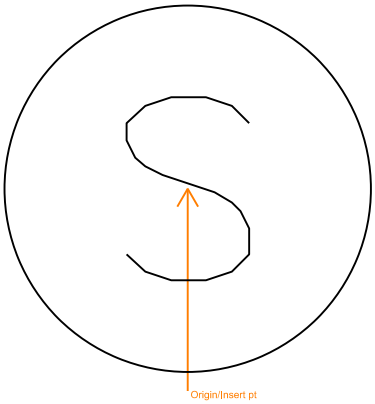
Electrical: SWMULT
MULTIPOSITION SWITCH
Element type: Symbol



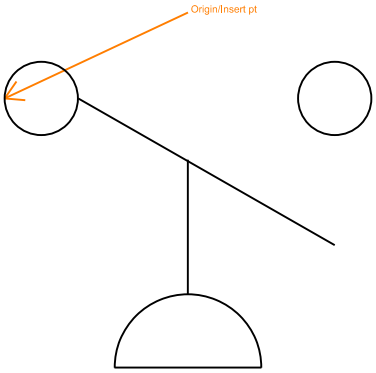
Electrical: SWPADN
SWITCH_PAD_NEW
Element type: Symbol



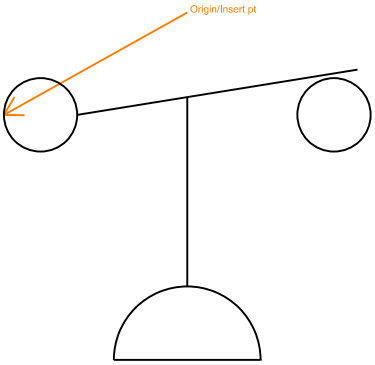
Electrical: SWPADX
SWITCH_PAD_EXIST
Element type: Symbol



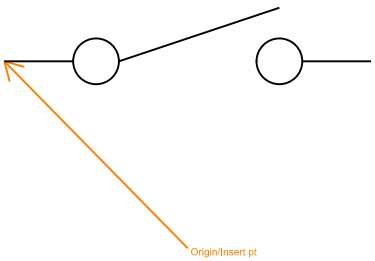
Electrical: SWPCM
CEILING MOUNTED PULL SWITCH
Element type: Symbol



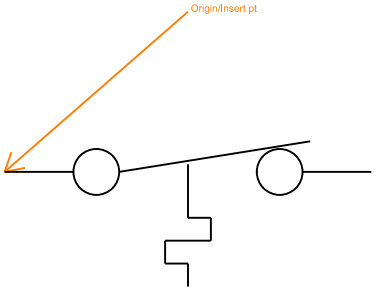
Electrical: SWPCOI
PRES SWTCH CLSE ON INCREASE
Element type: Symbol



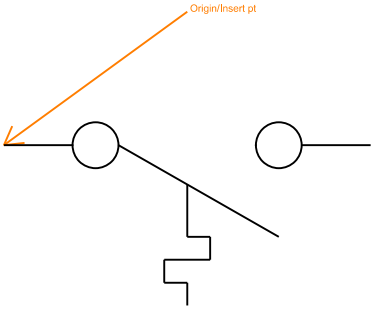
Electrical: SWPOOI
PRESS SWTCH OPN ON INCREASE
Element type: Symbol



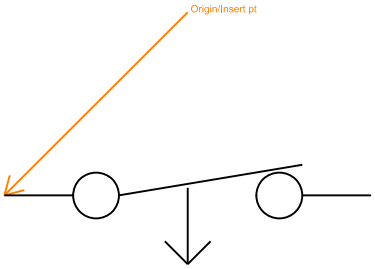
Electrical: SWSBRK
SINGLE BREAK SWITCH
Element type: Symbol



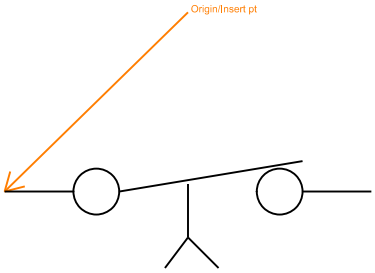
Electrical: SWTANC
NORMCLSDTEMPACTIVATEDSWTCH
Element type: Symbol



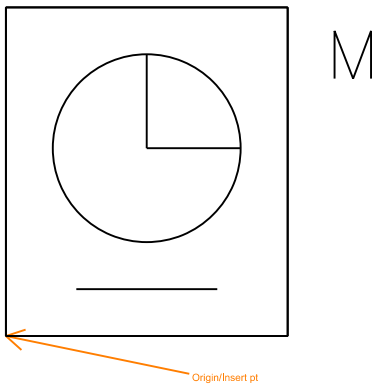
Electrical: SWTANO
NORMOPNTEMPACTIVATEDSWTCH
Element type: Symbol



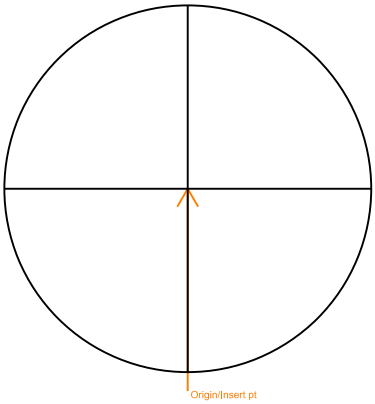
Electrical: SWTDNC
NORM CLSD TIME DELAY SWITCH
Element type: Symbol



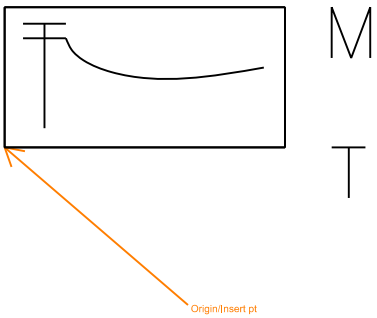
Electrical: SWTDNO
NORM OPEN TIME DELAY SWITCH
Element type: Symbol



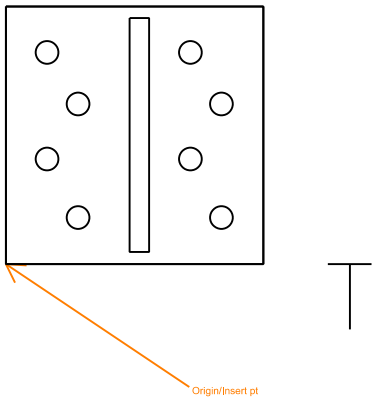
Electrical: TARDR
CARD READER WITH TIME AND ATTENDANCE
Element type: Symbol



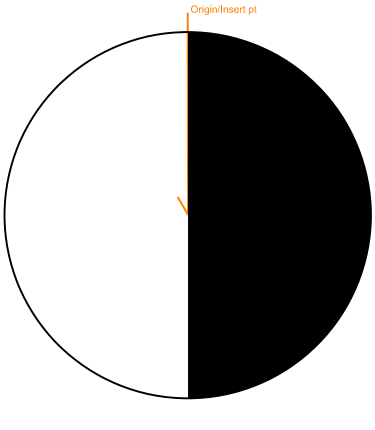
Electrical: TDZL
TOUCHDOWN ZONE LIGHT
Element type: Symbol



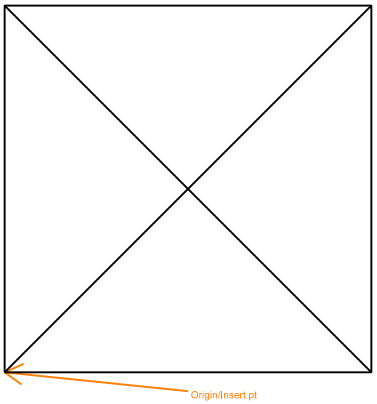
Electrical: TELEDL
TELEPHONE DIALER
Element type: Symbol



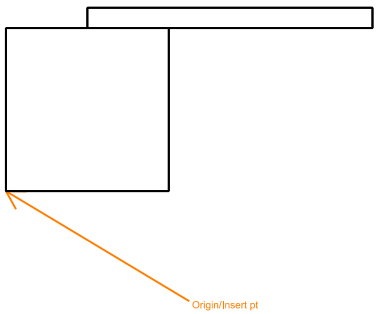
Electrical: THINGE
POWER TRANSFER HINGE
Element type: Symbol



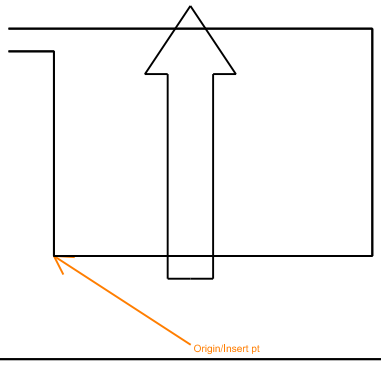
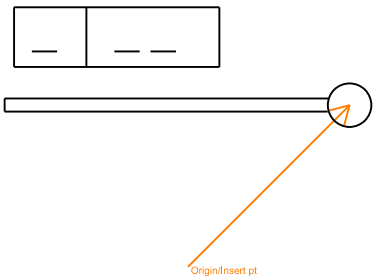
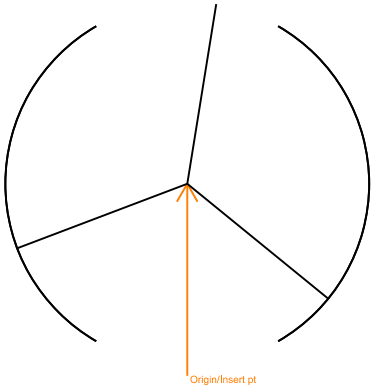
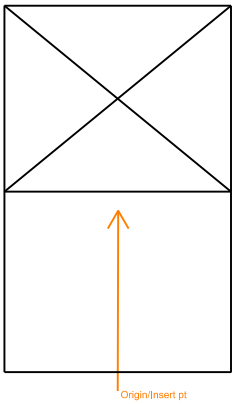
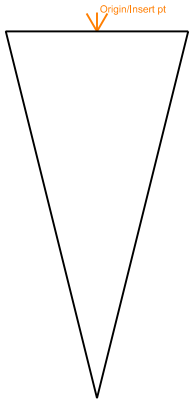
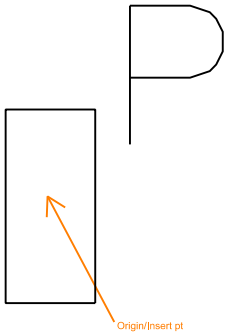
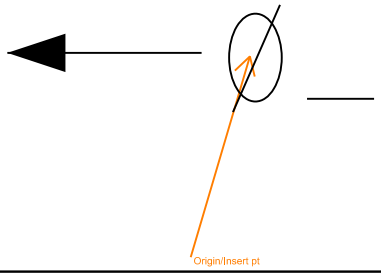
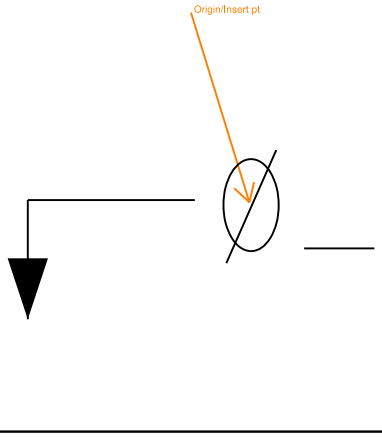
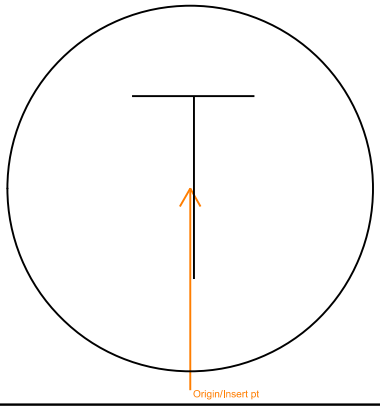
Electrical: THL
THRESHOLD LIGHT
Element type: Symbol

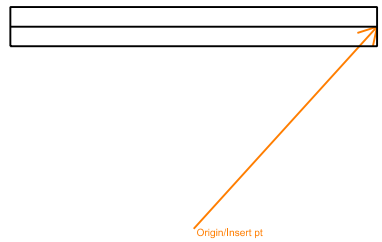
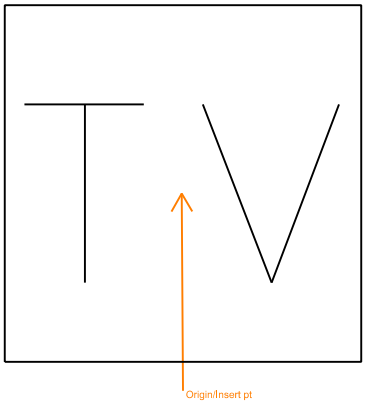
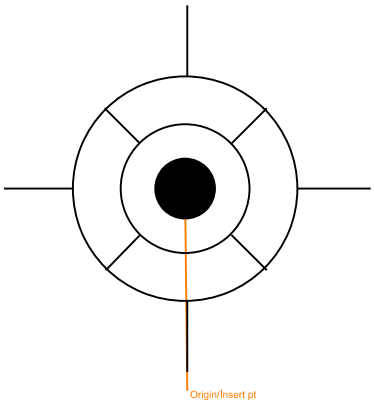
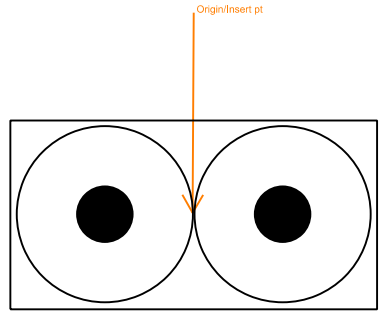
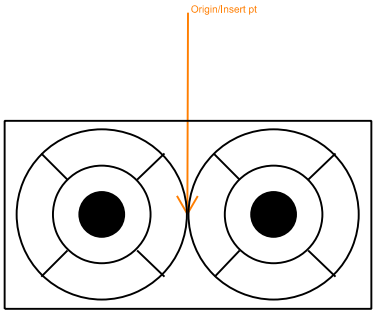
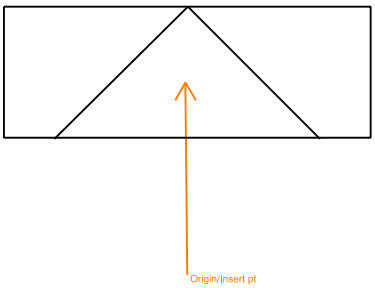
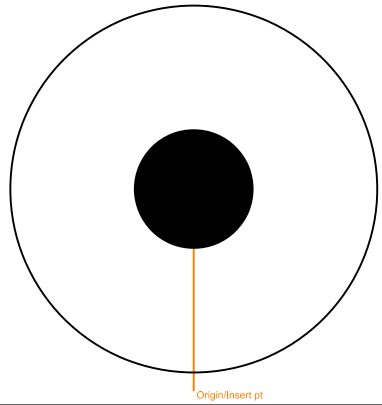
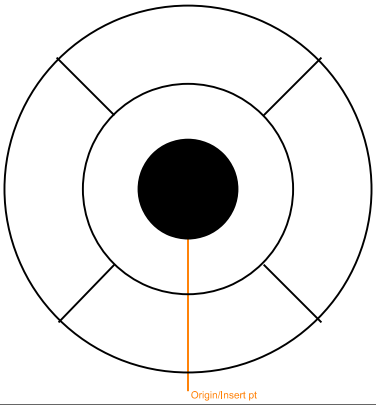
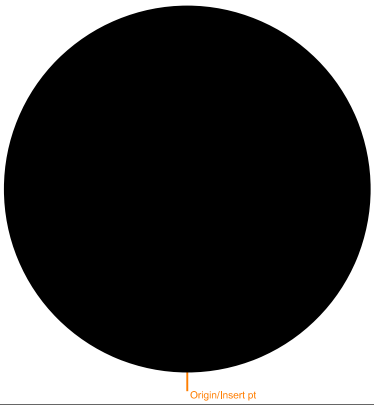


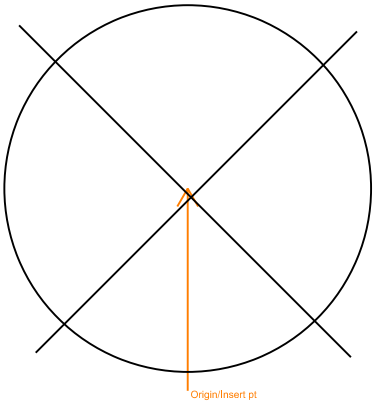
Electrical: TOWER
TRANSMISSION TOWER
Element type: Symbol



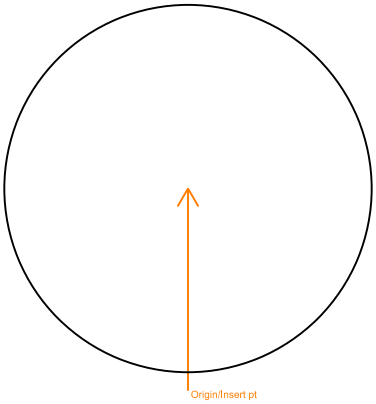
Electrical: TRFARM
TRAFFIC ARM
Element type: Symbol

		
Electrical: TRFCLP VEHICLE LOOP DETECTOR Element type: Symbol	Electrical: TRFSIG TRAFFIC SIGNAL MAST ARM Element type: Symbol	Electrical: TRNSTL TURNSTILE Element type: Symbol
		
Electrical: TSCTRL TR SIGNAL CONTROLLER Element type: Symbol	Electrical: TSHEAD TRAFFIC SIGNAL HEAD Element type: Symbol	Electrical: TSPBX TR SIGNAL PULLBOX Element type: Symbol
		
Electrical: TSPHS TR SIGNAL PH NO_THRU Element type: Symbol	Electrical: TSPHT TR SIGNAL PH NO_TURN Element type: Symbol	Electrical: TSTAT THERMOSTAT Element type: Symbol

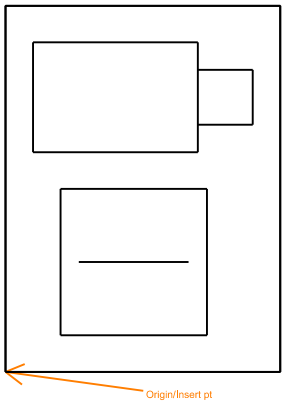
		
Electrical: TSVLDT TR SIGNAL VEH LOOP DETECTOR Element type: Symbol	Electrical: TVOUT TELEVISION OUTLET Element type: Symbol	Electrical: TWCLL TW CENTERLINE LIGHT Element type: Symbol
		
Electrical: TWELEL TW END LIGHT_ELEVATED Element type: Symbol	Electrical: TWELSF TW END LIGHT_SEMIFLUSH Element type: Symbol	Electrical: TWGSGN TW GUIDANCE SIGN Element type: Symbol
		
Electrical: TWLEL TW EDGE LIGHT_ELEVATED Element type: Symbol	Electrical: TWLSF TW EDGE LIGHT_SEMIFLUSH Element type: Symbol	Electrical: UTPLN POLE_NEW Element type: Symbol



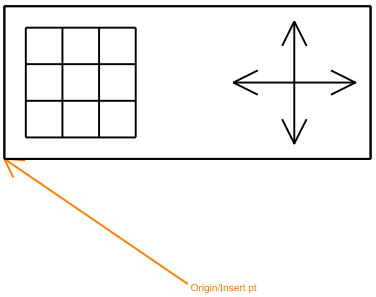
Electrical: UTPLR
POLE_REMOVE
Element type: Symbol



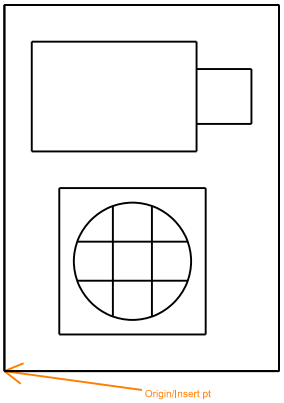
Electrical: UTPLX
POLE_EXISTING
Element type: Symbol



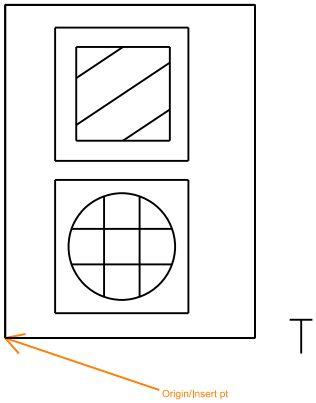
Electrical: VIDCR
CAMERA WITH CARD READER
Element type: Symbol



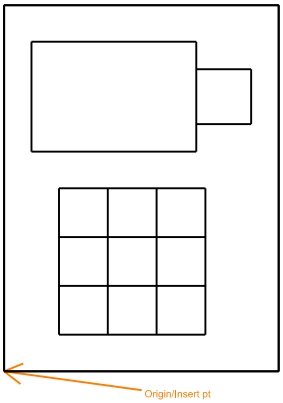
Electrical: VIDCTL
VIDEO CONTROL KEYBOARD
Element type: Symbol



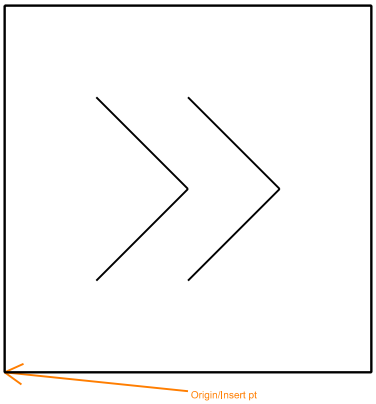
Electrical: VIDIC
VIDEO INTERCOM
Element type: Symbol



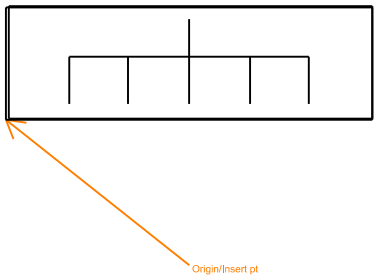
Electrical: VIDICM
VIDEO INTERCOM MASTER
Element type: Symbol



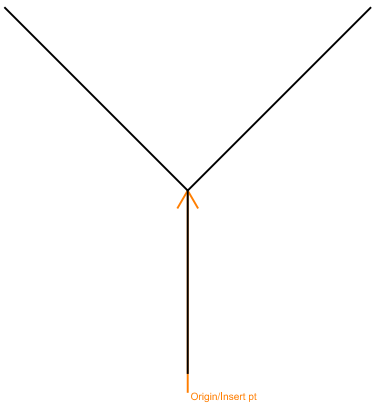
Electrical: VIDKPD
CAMERA WITH KEYPAD
Element type: Symbol



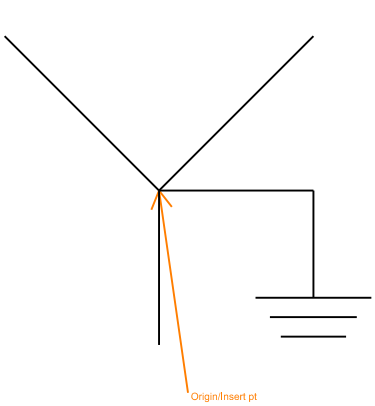
Electrical: VIDMTN
VIDEO MOTION DETECTOR
Element type: Symbol



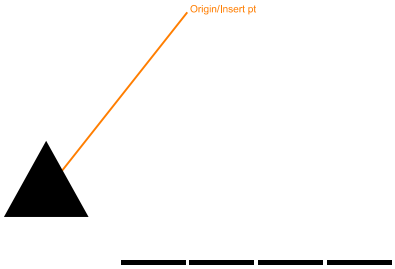
Electrical: VIDMUX
VIDEO MULTIPLEXER
Element type: Symbol



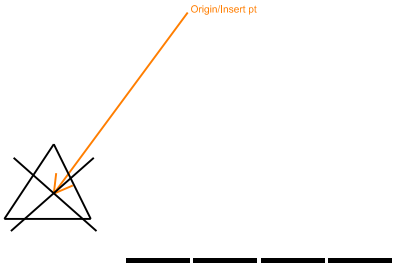
Electrical: WYECON
XFMR WYE CONNECTION
Element type: Symbol



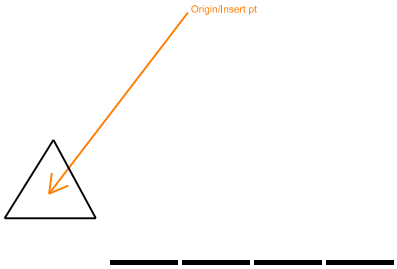
Electrical: WYEXGC
XFMR GROUNDED CONNECTION
Element type: Symbol



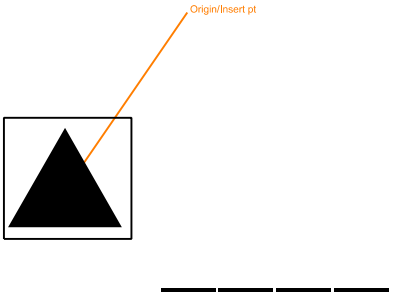
Electrical: XFRPLN
XFMR_POLE_NEW
Element type: Symbol



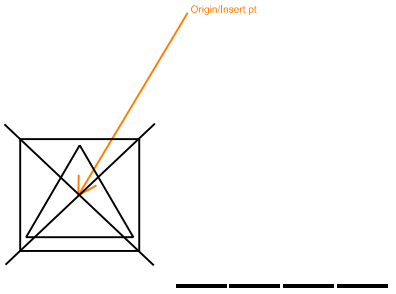
Electrical: XFRPLR
XFMR_POLE_REMOVE
Element type: Symbol



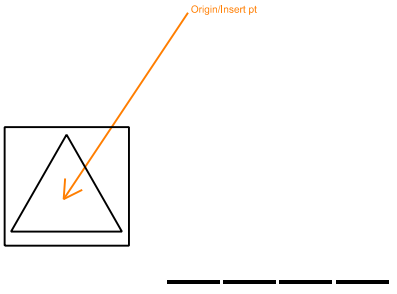
Electrical: XFRPLX
XFMR_POLE_EXIST
Element type: Symbol



Electrical: XFRPMN
XFMR_PAD_NEW
Element type: Symbol

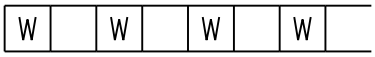


Electrical: XFRPMR
XFRM_PAD_REMOVE
Element type: Symbol

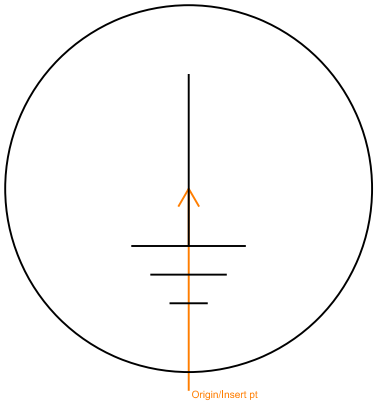


Electrical: XFRPMX
XFMR_PAD_EXIST
Element type: Symbol

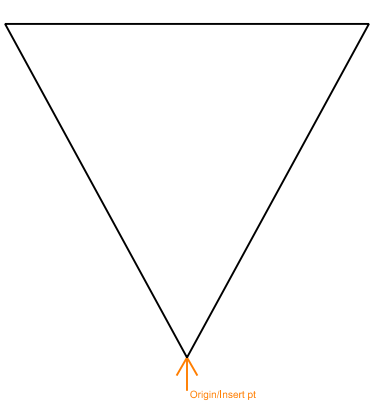
14 Telecommunications Lines Library

	
Telecommunications: FIBOPT FIBER OPTICS LINE Element type: Line	Telecommunications: WIREWY WIREWAY Element type: Line

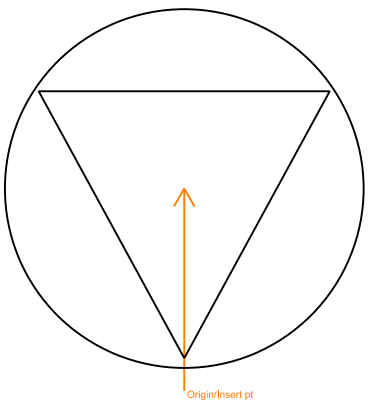
14 Telecommunications Symbols Library



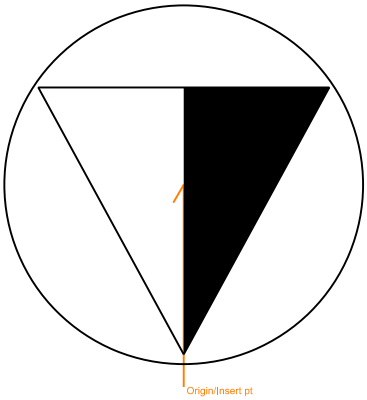
Telecommunications: GRDROD
GROUNDING ROD
Element type: Symbol



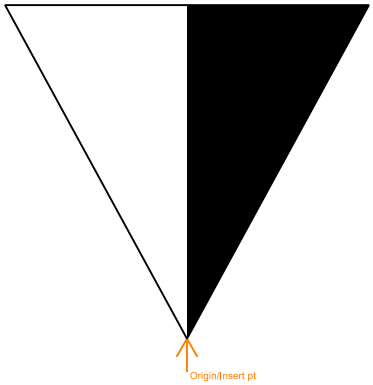
Telecommunications: RECDC
DATACOMM RECEPTACLE
Element type: Symbol



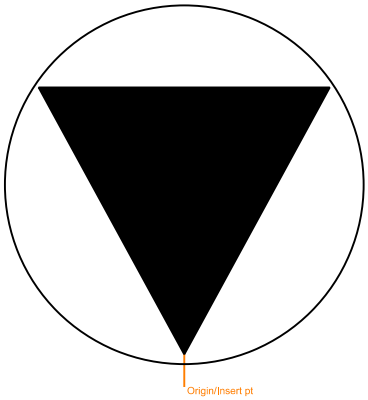
Telecommunications: RECDCF
DATACOMM FLOOR RECEPTACLE
Element type: Symbol



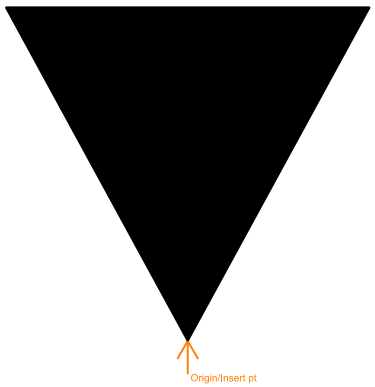
Telecommunications: RECTDF
TELEPHONE/DATA FLOOR RECEPTACLE
Element type: Symbol



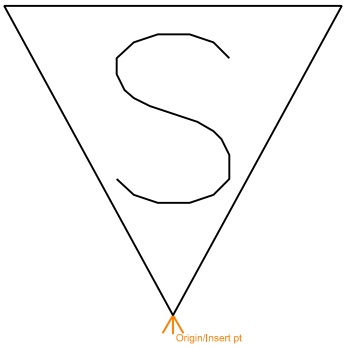
Telecommunications: RECTDW
TELEPHONE/DATA RECEPTACLE
Element type: Symbol



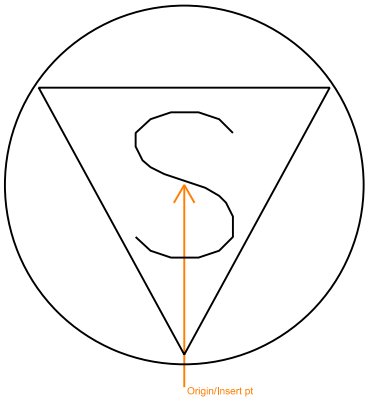
Telecommunications: RECTEF
TELEPHONE FLOOR RECEPTACLE
Element type: Symbol



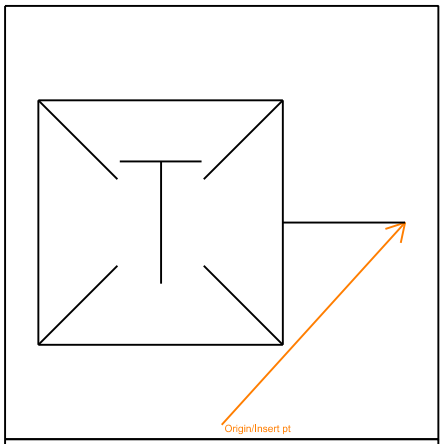
Telecommunications: RECTEL
TELEPHONE RECEPTACLE
Element type: Symbol



Telecommunications: SIPR
SIPRNet RECEPTACLE
Element type: Symbol



Telecommunications: SIPRF
SIPRNet FLOOR RECEPTACLE
Element type: Symbol



Telecommunications: TBOOTH
TELEPHONE BOOTH
Element type: Symbol

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14. ABSTRACT

The A/E/C CAD Standard has been developed by the CAD/BIM Technology Center (Center) for Facilities, Infrastructure, and Environment to eliminate redundant Computer-Aided Design (CAD) standardization efforts within the Department of Defense (DoD) and the Federal Government. The manual is part of an initiative to develop a nonproprietary CAD standard that incorporates existing industry, national, and international standards and to develop data standards that address the entire life cycle of facilities within the DoD.

The CAD drafting standards addressed in the A/E/C CAD standard include presentation graphics, level/layer assignments, electronic file naming, and standard symbology. The Center's primary goal is to develop a CAD standard that is generic enough to operate under various CAD software packages (such as Bentley's MicroStation and Autodesk's AutoCAD) and incorporate existing industry standards when possible.

15. SUBJECT TERMS
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CAD standards

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